ORDER NO. EMID981697
A4

Service Manual

PCM Digital Ensemble

SX-PR902R /PR902C

(M), (MC), (XM), (EN), (EH), (EF), (EZ), (EW), (EA), (EP), (EK), (XL), (XR), (XS), (XD), (XT), (X), (XP), (XW)

Photo: SX-PR902C

AREAS

(M):	U.S.A.
(MC):	Canada
(XM):	Mexico
(EN):	Norway, Sweden, Denmark, Finland
(EH):	Holland, Belgium
(EF):	France, Italy
(EZ):	Germany
(EW):	Switzerland
(EA):	Austria
(EP):	Spain, Portugal, South Africa
(EK):	the United Kingdom
(XL):	New Zealand
(XR):	Australia
(XS):	Malaysia
(XD):	Hong Kong
(XT):	Taiwan
(X):	Thailand, Panama, Venezuela, Ecuador, Colombia, Chile, Peru, Brasil
(XP):	Philippines
(XW):	Singapore

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

■ Specifications

KEYBOARD		88 KEYS
SOUND GENERATOR		PCM
MAXIMUM NUMBER OF NOTES PRODUCED SIMULTANEOUSLY		64 SOUNDS
SOUNDS	NUMBER OF SOUNDS	317 SOUNDS + 12 DRUM KITS + 2 DIGITAL DRAWBARS
	PIANO	GRAND, UPRIGHT, ELECTRIC, MODERN
	SOUND GROUP	GUITAR & HARPSI, STRINGS & VOCAL, BRASS, SAX & WOODWIND, ORGAN & ACCORDION, SYNTH, MALLET & ORCH PERC, WORLD PERC, GM SPECIAL, BASS, DRUM KITS, PIANO MIXTURES, ORCHESTRAL MIXTURES, DIGITAL DRAWBAR
	GM SOUNDS	128 NOTES
SOLO PIANO		○
TOUCH SENSITIVITY		○
PEDAL		SUSTAIN, SOSTENUTO, SOFT
EFFECT		SUSTAIN PEDAL, DIGITAL EFFECT, DSP EFFECT, BRILLIANCE, PIANO AMBIENCE, DIGITAL REVERB
PART SELECT		RIGHT1, RIGHT2, LEFT
TRANSPOSE		G-C-F#
RHYTHMS	NUMBER OF RHYTHMS	128 RHYTHMS ×4 VARIATIONS
	RHYTHM GROUP	ROCK & POP, JAZZ & BLUES, COUNTRY, BALLAD, LATIN & WORLD, SOUL & DISCO, BIG BAND & SWING, USA TRAD,MARCH & WALTZ, SHOW TIME & TRAD DANCE
METRONOME		○
CONTROLS		MAIN VOLUME, APC/SEQUENCER VOLUME, BALANCE, MUTE, CONDUCTOR, START/STOP, INTRO & ENDING 1, INTRO & ENDING 2, FILL IN 1, FILL IN 2, COUNT INTRO, SYNCHRO START, TEMPO/PROGRAM, TAP TEMPO, FADE IN/OUT, SPLIT POINT, R1/R2 OCTAVE
PIANO PERFORMANCE PADS		20 BANKS × 6 PADS WITH SOLO (USER BANK × 3 [STORAGE CAPACITY: APPROX. 3500NOTES], COMPILE BANKS × 2, CONTROL PRESET × 1) STOP/RECORD, AUTO SETTING
AUTO PLAY CHORD		MODE: BASIC, ADVANCED 1, ADVANCED 2, PIANIST ON BASS, CHORD FINDER, LEFT HOLD

Technics

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MUSIC STYLE ARRANGER	○
SOUND ARRANGER	○
PIANO STYLIST	○
ONE TOUCH PLAY	○
TECHNI-CHORD	○
PANEL MEMORY	3 BANKS × 8, SET, NEXT BANK, BANK VIEW
SEQUENCER	16 TRACKS RESOLUTION : 1/96 PER BEAT STORAGE CAPACITY : APPROX. 40000 NOTES (10 SONGS MAX.) INPUT MODES : EASY RECORD, REALTIME RECORD, STEP RECORD FUNCTIONS : CREATE, EDIT
COMPOSER	5 PARTS : BASS, ACCOMP 1, ACCOMP 2, ACCOMP 3, DRUMS STORAGE CAPACITY : APPROX. 10000 NOTES INPUT MODES : EASY COMPOSER, REALTIME RECORD, STEP RECORD FUNCTIONS : PATTERN COPY, SEQ TO COMPOSER COPY, LOAD SINGLE COMPOSER MEMORY : 3 BANKS×10 (VARIATION 1–4, INTRO 1, 2, FILL IN 1, 2, ENDING 1, 2)
DISK DRIVE	3.5 inch FLOPPY DISK DRIVE for 2HD (1.44 MB), 2DD (720 KB) LOAD, SAVE, DIRECT PLAY, SONG MEDLEY, DISK TOOLS, PREFERENCES
SOUND SETTING	PART SETTING, MIXER, MASTER TUNING, KEY SCALING, TECHNI-CHORD, REVERB, TONE CONTROL, DSP EFFECT, PIANO AMBIENCE
SOUND EDIT	EASY EDIT, TONE SELECT, TONE LAYER, PITCH, FILTER, AMPLITUDE, DIGITAL EFFECT, CONTROLLER MEMORY: 40, 1 USER DRUM KIT
CONTROL	INITIAL, PEDAL SETTING, DISPLAY TIME OUT, PANEL MEMORY MODE, MUSIC STYLE ARRANGER MODE, FADE IN/OUT SETTING, WALLPAPER SETTING
DISPLAY	LCD (COLOR) PAGE, CONTRAST, EXIT, DISPLAY HOLD
HELP	○
DEMO	○
TERMINALS	PHONES × 2, LINE OUT (R/R+L, L), AUX IN (R/R+L, L), COMPUTER, MIDI (IN, OUT, THRU), PEDAL IN
MIC INPUT	○ (MIC REVERB & EFFECT)
OUTPUT	240 W (120 W × 2)
SPEAKERS	20 cm×2, 6.5 cm×2, MONITOR SPEAKER×2
POWER REQUIREMENT	200 W AC120/220/240 V 50/60 Hz AC120 V 60 Hz (NORTH AMERICA AND MEXICO) AC230-240 V 50/60 Hz (EUROPE, AUSTRALIA, NEW ZEALAND, SINGAPORE AND PHILIPPINES)
DIMENSIONS (W × H × D)	140.9 cm×108 cm×62.9 cm (55-15/32"×42-17/32"×24-3/4")
NET WEIGHT	78.5kg (173.1lbs.)
ACCESSORIES	AC CORD, FLOPPY DISK

•Specifications are subject to change without notice for further improvement.

WARNING

To prevent the risk of fire, smoke, or electrical shock and to ensure safe operation, please be sure to follow the safety guidelines below.

1. At places where special caution is required, the necessary safety precautions are clearly labeled or printed, for example, on the cabinet, or on the part concerned. Please follow these safety precautions, and also those listed in the Owner's Manual.

2. Parts which have a ⚠ mark in the circuit diagram or in the parts list are essential for safety. When replacing these parts, be sure to use only the specified parts.

3. Use the specified types for internal wiring (double-insulated wiring, etc.).

4. When replacing parts on the AC primary side (power transformer, electric switch, electrical cord, noise-prevention condenser, etc.), wind the lead wire and secure it by soldering.

5. Do not let the wiring come into contact with heat-emitting devices (fuse resistor, radiator plate, etc.).

6. When replacing the wiring, make sure that it is not in contact with the unfinished or rough edge of a part.

7. When replacing the power cord (except for the plug-in type), tug it from various directions to confirm that it does not slip out of place.

8. Spacing
   If soldering was done on the AC primary circuit, confirm that the interval between the soldered terminals or between the terminal and surrounding metallic parts is at least the minimum required (between the primary circuit and the chassis: at least 6.5 mm; between primary circuit terminals: at least 4.0 mm; between primary circuit terminals and secondary circuit terminals: at least 6.5 mm).

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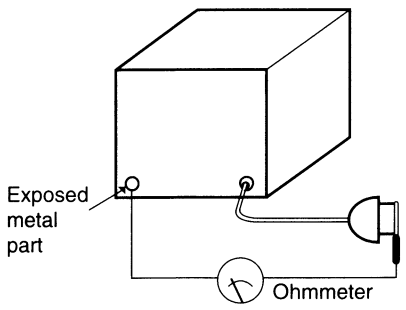
SAFETY PRECAUTION

● Safety Precaution

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only the manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

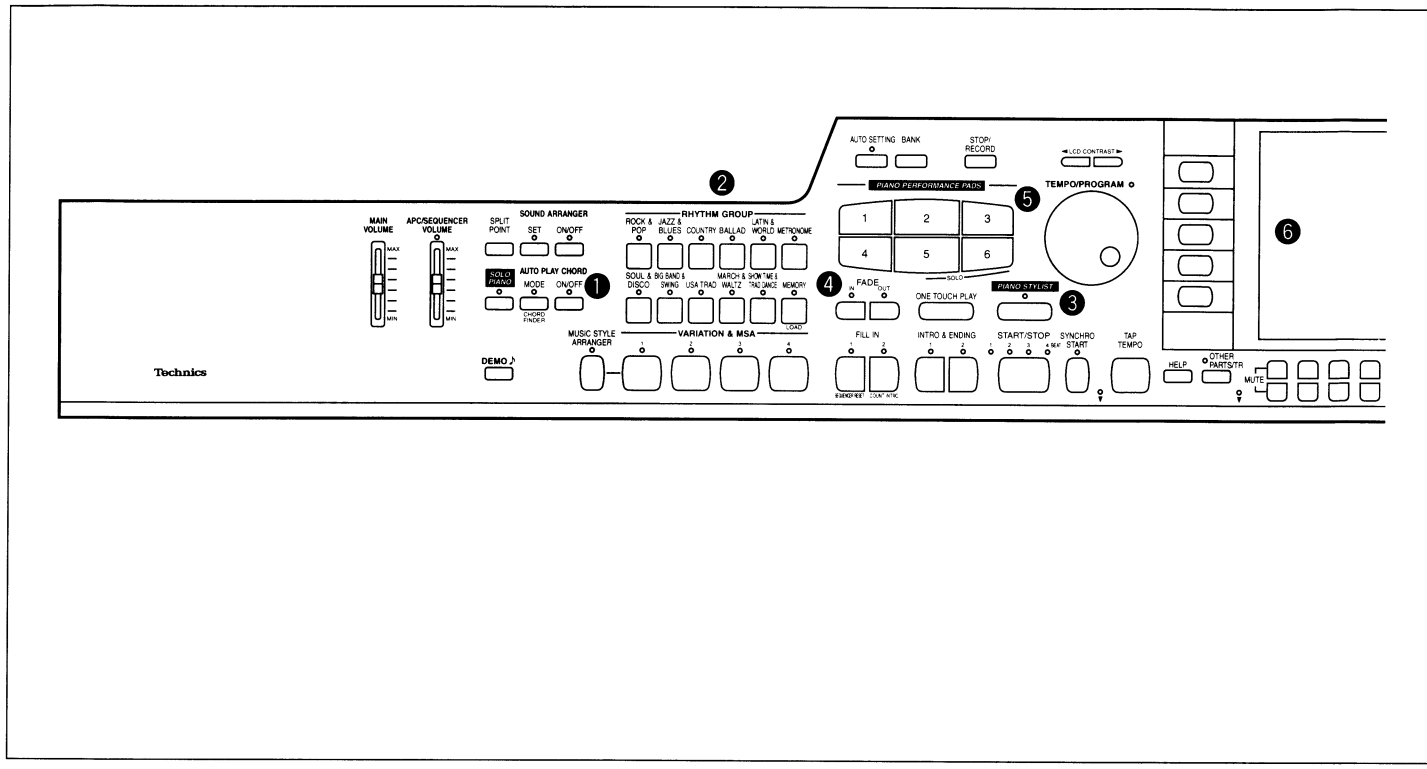
● Insulation Resistance Test

1. Unplug the power cord and short the prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screw heads, connectors, control shafts, handle brackets, etc. Measurements should range from 4 MΩ to infinity for all exposed parts.



Resistance = 4MΩ to ∞

ARRANGEMENT OF CONTROL PANEL



❶ AUTO PLAY CHORD
Add an automatic accompaniment to your selected rhythm.

❷ RHYTHM GROUP
Various rhythm patterns are available for each rhythm group.

❸ PIANO STYLIST
You can choose to have all the settings of this instrument automatically set.

❹ FADE IN/OUT
Begin your song with a slowly increasing volume, or end it by having the sound slowly fade away.

❺ PIANO PERFORMANCE PADS
Add various phrases to your performance with the pad buttons.

❻ DISPLAY
Displays performance information, function settings and other messages.
- Use the LCD CONTRAST buttons to adjust the display so that it is easy to read.

❼ PANEL MEMORY
Store the panel settings, then recall them instantaneously just by pressing a button or two.

❽ CONDUCTOR
Assign a different sound to each part, then assign the desired parts to sections of the keyboard.

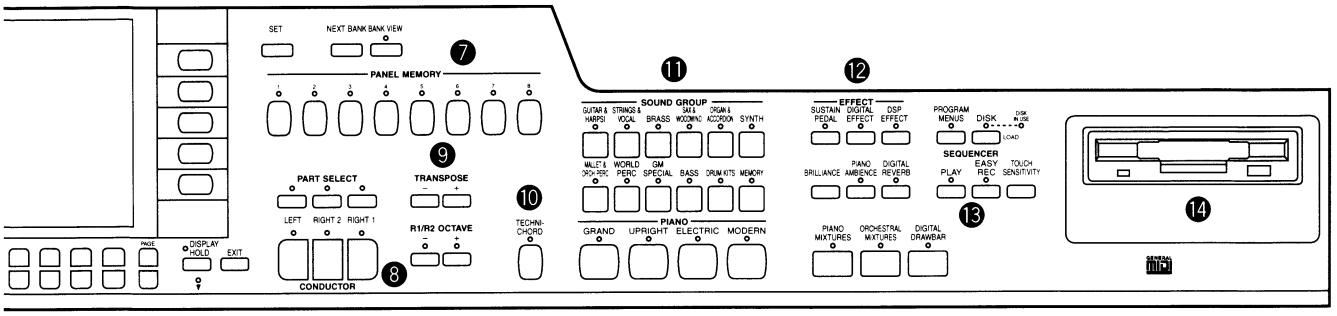
❾ TRANSPOSE
Raise or lower the key of the entire keyboard.

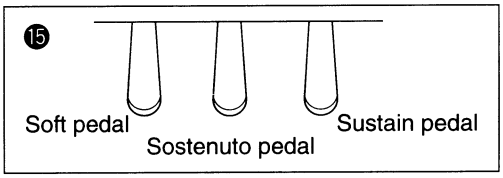
❿ TECHNI-CHORD
Block chords are automatically added to the melody.

⓫ SOUND GROUP
Various sounds are available for each sound group.

⓬ EFFECT
Add various effects to the sounds.

⓭ SEQUENCER
Record and play back your performance.





⓮ Disk Drive

The Disk Drive allows you to record your performances on a floppy disk, as well as play commercial recorded disks on this instrument.

⓯ Pedals

The sustain pedal and sostenuto pedal apply sustain effects, and the soft pedal works as a damper.

Tuning

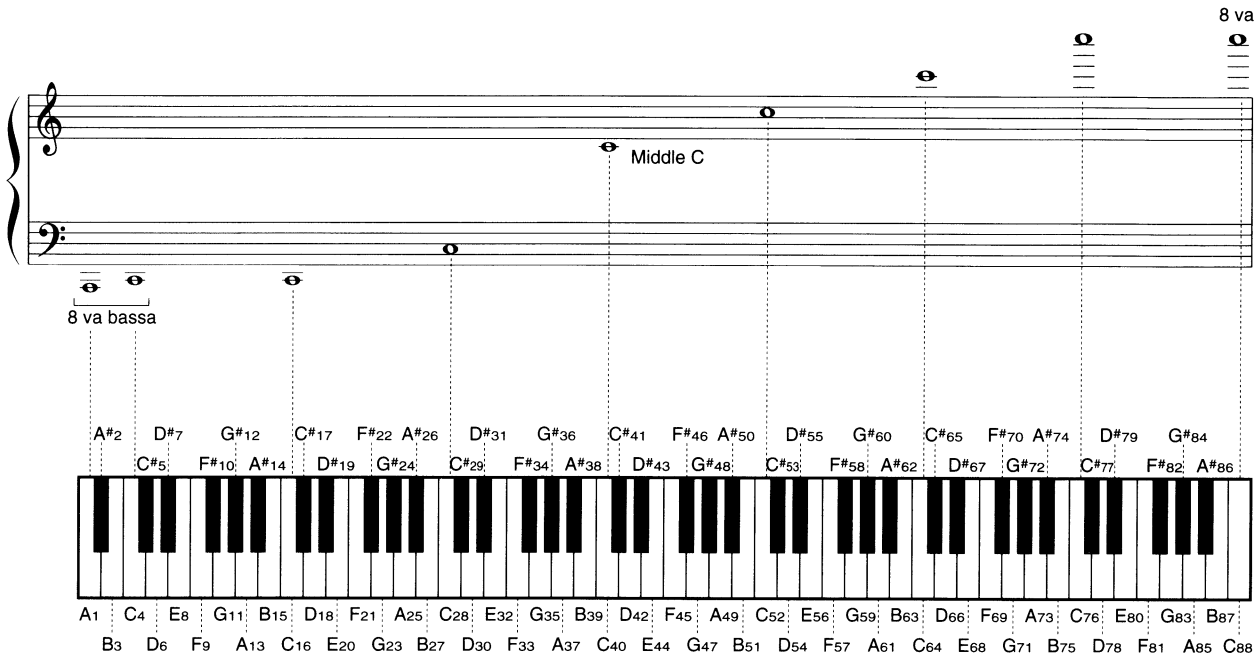
Unlike an acoustic piano, PR Series Digital Ensemble never needs tuning.
The pitch of this instrument can be adjusted for when playing along with other instruments.

About the backup memory

The settings and memories are maintained for approximately 80 minutes after the power to this instrument is turned off. If you wish to keep the memory contents, before you turn off the instrument, use the SAVE procedure to store the desired data on a disk for recall at a later time.

- Except for the LCD CONTRAST, HELP (language selection), SOLO PIANO TYPE, MIDI USER PRESET, MIDI SETTING LOAD OPTION, DISPLAY TIMEOUT, and PREFERENCE (DISK) settings, the backup memory does not function for the stored contents until the power has been on for about 10 minutes.
- When you quit the operating mode, a REMINDER display may appear to remind you to save the data.

KEYBOARD RANGES



INITIAL SETTING

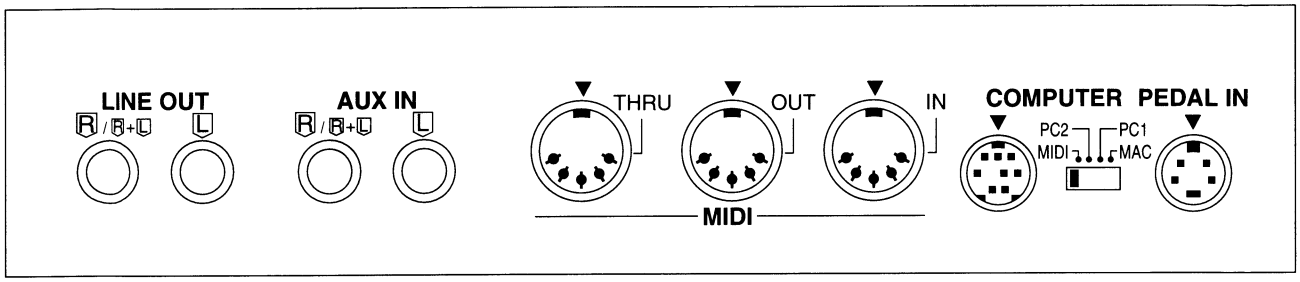
The following procedure resets all programmable settings, functions and memories to their initialized (factory-preset) status. Use this procedure if the buttons, keys, etc. malfunction, or when you wish to reset the memories and functions.

1. Turn off the **POWER** button.
2. While pressing the three lower left buttons in the **RHYTHM GROUP** section (**SOUL & DISCO**, **BIG BAND & SWING** and **USA TRAD**) at the same time, turn the **POWER** button on again.

NOTE:
All stored data in the **SEQUENCER** and **COMPOSER** and other user settings (excluding USER MIDI SETTINGS, HELP (language selection) and LCD CONTRAST) will be deleted with this operation.

TERMINALS

(on the rear panel)



LINE OUT (output level 1.5 Vrms, 600 Ω)
By connecting an external high-power amplifier, the sound can be reproduced at a high volume. To output monaural sound, connect the external equipment to the **R/R+L** terminal. (Do not connect the **L** terminal.)

AUX IN (input level 0.5 Vrms, 6 kΩ)
Other instruments such as a sound generator can be connected to this terminal, and the sound will be output from this instrument's speakers. To receive monaural sound, connect the other instrument to the **R/R+L** terminal. (Do not connect the **L** terminal.)

MIDI
These terminals are for connection to another MIDI instrument.

COMPUTER
By connecting this terminal to the serial port of a computer, performance data can be exchanged. Use the switch to select the type of computer.
- Be sure that the power to this instrument is turned off when connecting to a computer or when changing the switch setting.

> Caution:
> Failure to turn off the power before changing the switch setting may result in malfunction.

- When no computer is connected, or when a MIDI interface is used, the switch should be set to MIDI.

Connection to a Macintosh series computer
Use an ACCESSORY CABLE (SZ-JJAP1: sold separately) to connect the **COMPUTER** terminal of this instrument to the modem port or printer port of a Macintosh Series computer. Set the switch to **MAC**.
- Set the MIDI interface clock of the Macintosh software to 1 MHz.
- Do not remove the core at either end of the cable.

Connection to a PC
Use an ACCESSORY CABLE (SZ-JJAT1: sold separately) to connect the **COMPUTER** terminal of this instrument to the RS232C terminal of a PC. Set the switch to **PC2**.
- The MIDI driver included with the cable should be installed in the computer. (Refer to the manual accompanying the cable.)
- Do not remove the core at either end of the cable.

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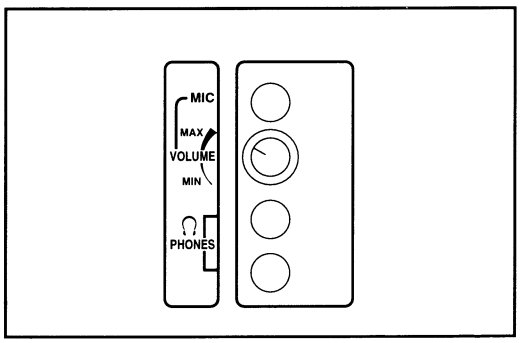
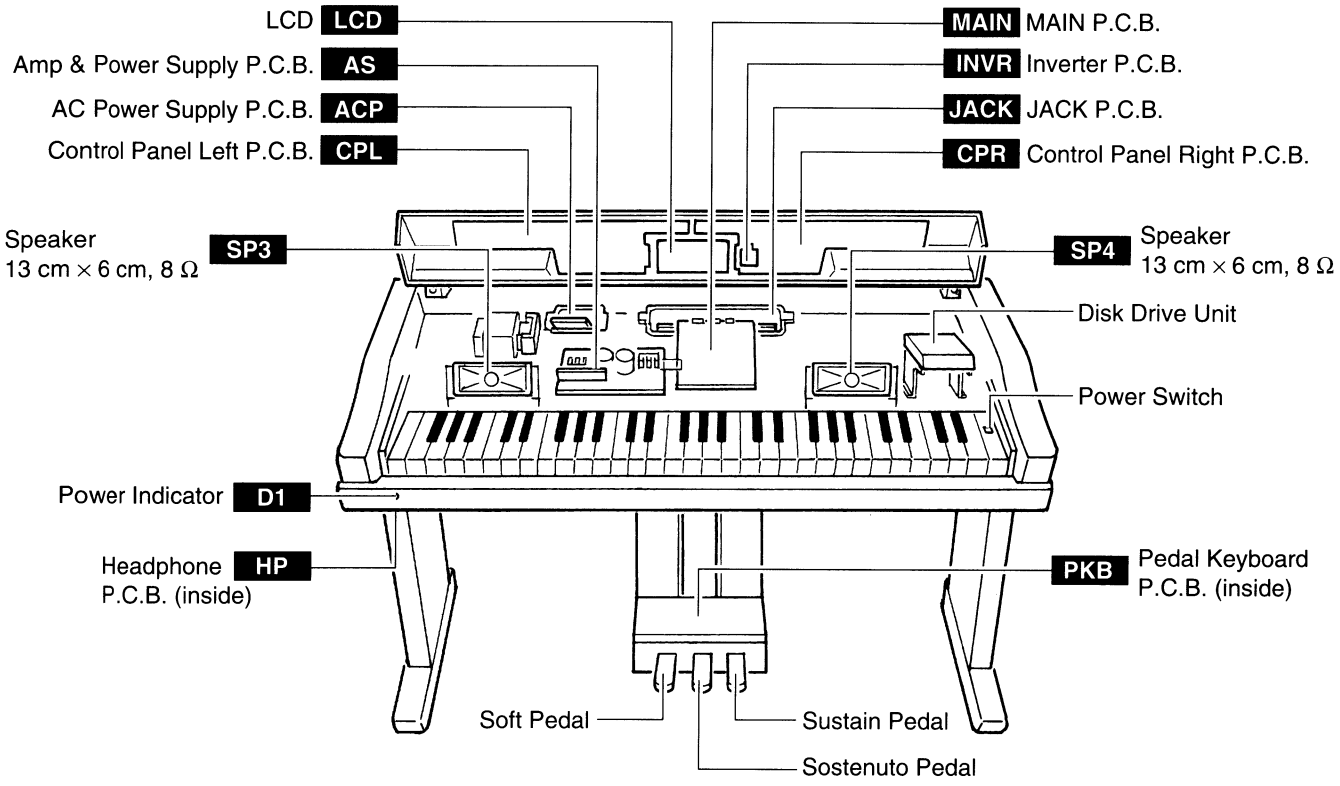
(beneath the left end of keyboard)



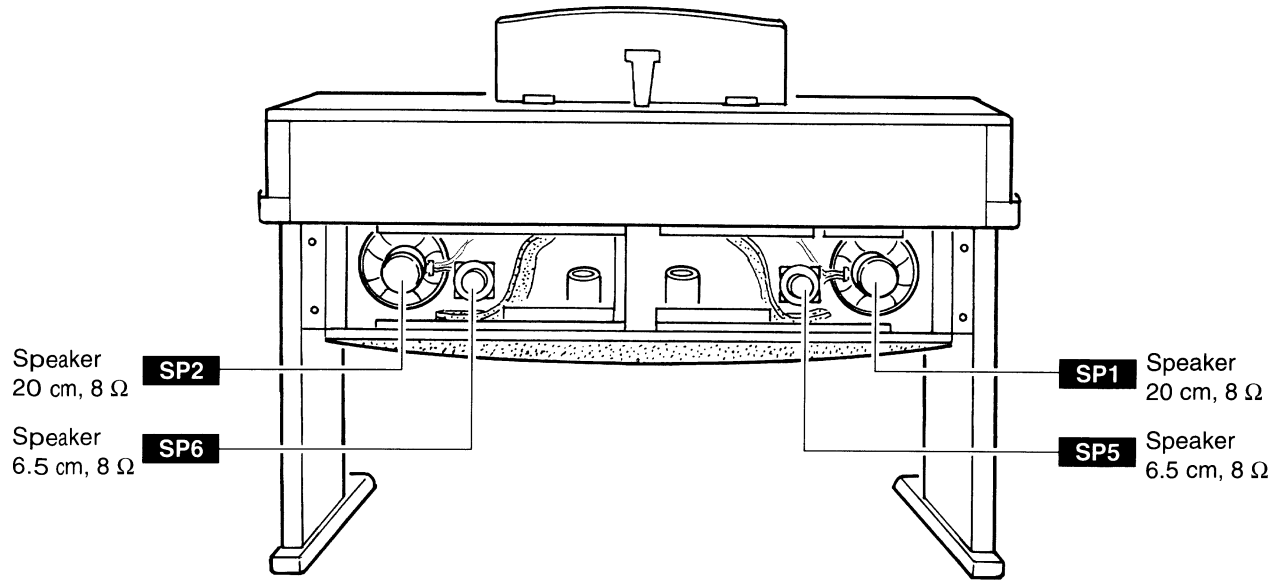
PHONES ×2
Headphones can be connected to this instrument.
- When headphones are plugged into this jack, the speakers of this instrument are disabled.

MIC
A microphone can be connected to this instrument and the sound output through the speakers. Use the **VOLUME** control to adjust the volume.
- Effects such as reverb can be applied to the microphone input.

PARTS LOCATION


LCD LCD
Amp & Power Supply P.C.B. AS
AC Power Supply P.C.B. ACP
Control Panel Left P.C.B. CPL
MAIN MAIN P.C.B.
INVR Inverter P.C.B.
JACK JACK P.C.B.
CPR Control Panel Right P.C.B.
Speaker 13 cm × 6 cm, 8 Ω SP3
SP4 Speaker 13 cm × 6 cm, 8 Ω
Disk Drive Unit
Power Switch
Power Indicator D1
Headphone HP P.C.B. (inside)
PKB Pedal Keyboard P.C.B. (inside)
Soft Pedal
Sustain Pedal
Sostenuto Pedal

[Fig. 1]

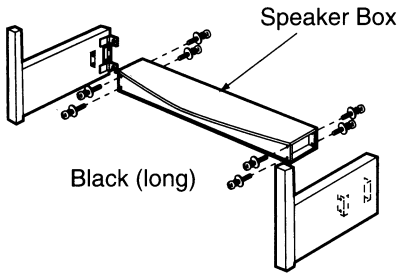


[Fig. 2]

HOW TO ASSEMBLE THE PIANO

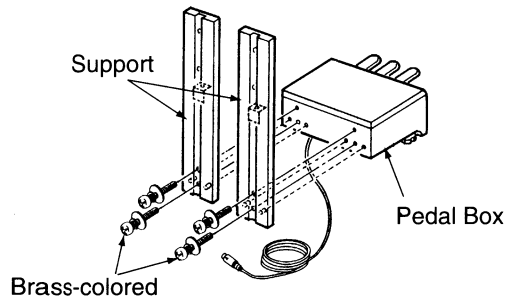
To prevent the piano unit from falling off the stand, secure it firmly with the screws.

1 Assemble the right and left side planks and the speaker box with the 8 long black screws.



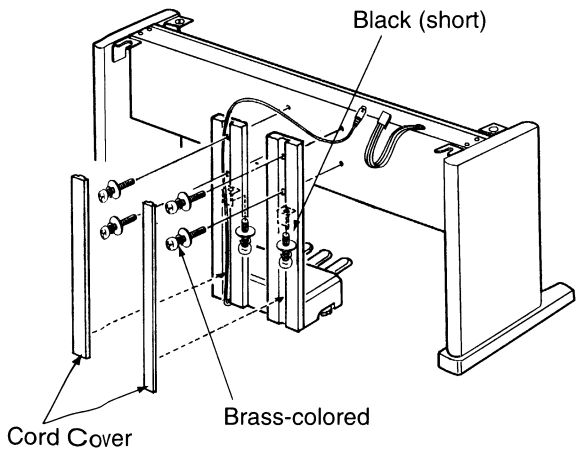
[Fig. 3]

2 Assemble the pedal box and the support with the 4 brass-colored screws.



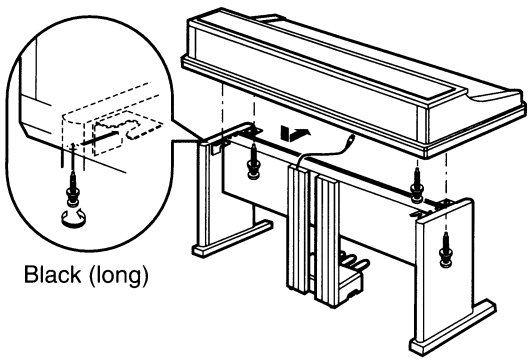
[Fig. 4]

3 Place the stand upright and mount the pedal box unit to the speaker box with 4 brass-colored screws and 2 short black screws.
And lay the pedal cord in the groove on the support (left), and then set 2 cord covers in right and left grooves.



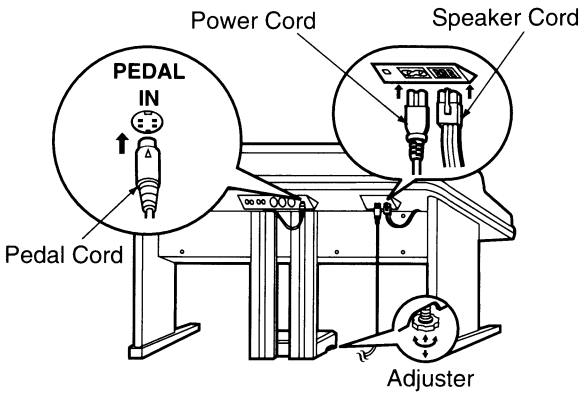
[Fig. 5]

4 Place the piano unit on the stand and secure it with 4 long black screws.



[Fig. 6]

5 Connect the pedal cord, speaker cord and power cord to the terminals located on the rear of the piano unit as shown below.



[Fig. 7]

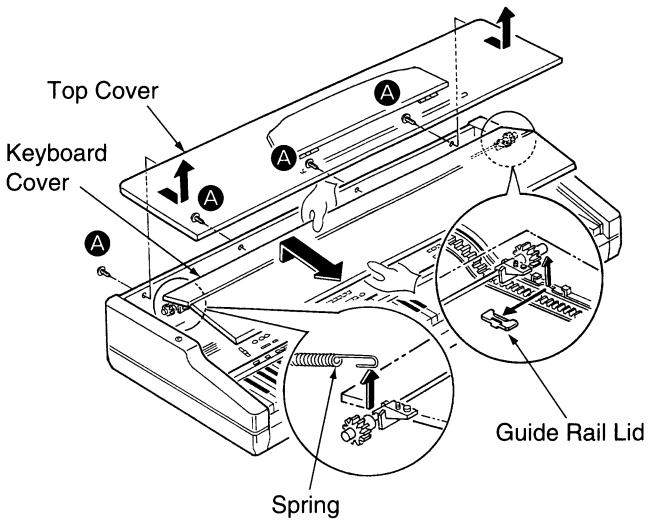
DISASSEMBLY INSTRUCTIONS

1 Removing the top cover

1. Remove the top cover mounting screws (Ⓐ 4 pcs.).
2. Lift up the top cover (as shown by the arrows).

2 Removing the keyboard cover

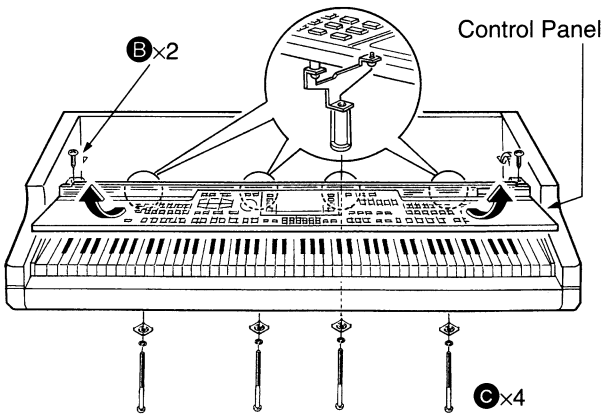
1. Remove the top cover (see step 1).
2. Release the spring from the shaft.
3. Remove the guide rail lids from the guide rails.
4. Match the gears of the keyboard cover with the notches in the guide rails and lift up the keyboard cover, and slide it forward (as shown by the arrow).



[Fig.8]

3 Removing the control panel

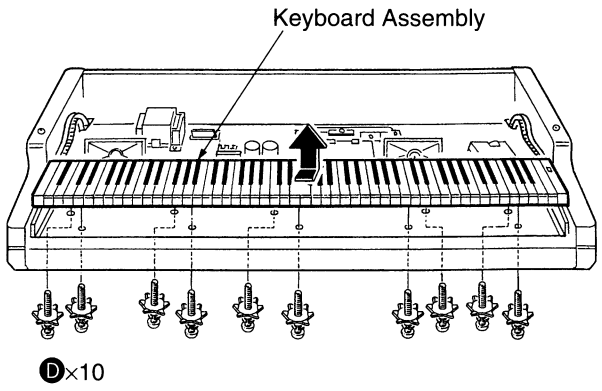
1. Remove the keyboard cover (see step 2).
2. Remove the control panel mounting screws (Ⓑ 2 pcs. and Ⓒ 4 pcs.).
3. Remove the control panel as shown by the arrows.



[Fig.9]

4 Removing the keyboard assembly

1. Remove the control panel (see step 3).
2. Remove the keyboard assembly mounting screws located on the bottom of the cabinet (Ⓓ 10 pcs.).
3. Remove the keyboard assembly as shown by the arrow.



[Fig.10]

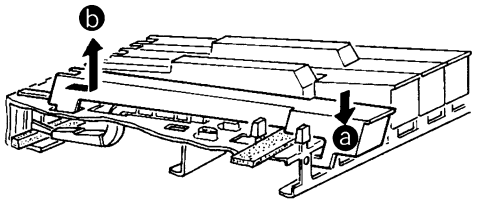
5 Key(s)

Disassembly

1. Remove the keyboard assembly (see step 4).
2. Release the key claw.
   - ⓐ Press the front of the key downward slightly.
   - ⓑ Press the rear of the key forward gently.
3. To remove the key, lift it as shown in Fig. 11.

NOTE:

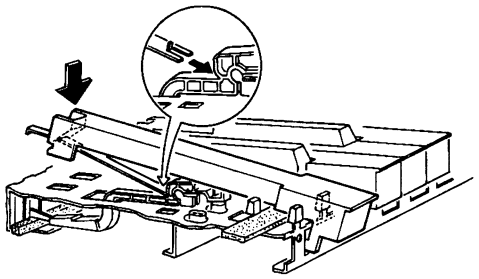
- The key claw is easily broken. Do not apply undue force. Should a key claw break, it can still be used; however, a replacement is recommended.
- If a black key is to be replaced, it is necessary to remove both adjacent white keys.



[Fig.11]

Assembly

1. Insert the front part of the key into the chassis.
2. Insert the plate spring into the hammer notch as shown in Fig. 12.
3. While slowly lowering the key into the chassis, insert the plate spring into the notch at the rear of the key.
4. Carefully insert the key into the opening in the chassis and slide the key towards the rear to lock it in place.



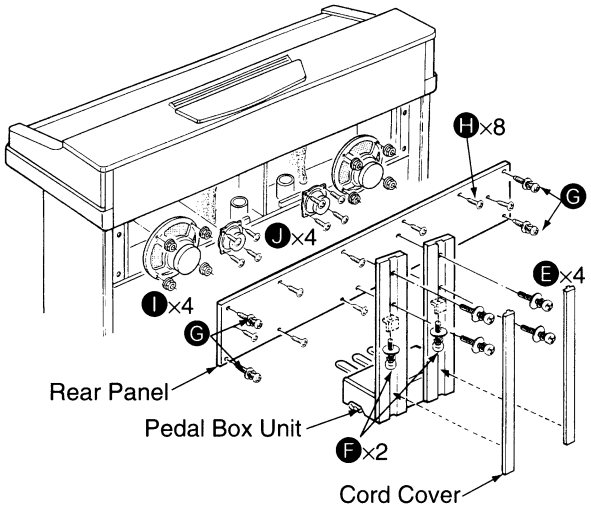
[Fig.12]

6 Removing the pedal box unit

1. Remove the cord covers.
2. Remove the pedal box unit mounting screws (Ⓔ 4 pcs. and Ⓕ 2 pcs.).

7 Removing the speakers

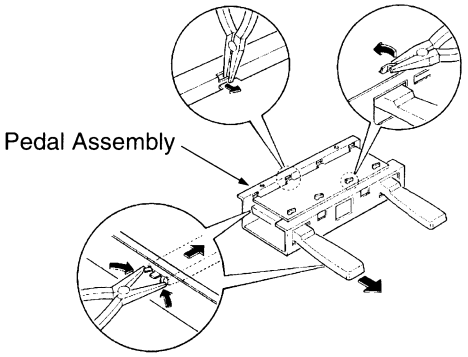
1. Remove the pedal box unit (see step 6).
2. Remove the rear panel mounting screws Ⓖ 4 pcs. and Ⓗ 8 pcs.).
2. Remove the 20 cm speaker mounting nuts (Ⓘ 4 pcs.).
3. Remove the 6.5 cm speaker mounting screws (Ⓙ 4 pcs.).



[Fig.13]

8 Disassembly of the pedal assembly

1. Remove the pedal assembly from the pedal box.
2. Disassemble the pedal assembly as shown in Fig. 14.



[Fig.14]

9 Removing the MAIN, AS, JACK, HP, ACP PCBs and LCD

- Remove the keyboard cover (see step 2).
- Pull out the connectors on the printed circuit boards.

MAIN P.C.B.

1. Remove the MAIN P.C.B. mounting screws (K 2 pcs.).
2. Release the claws of the 3 P.C.B. holders.

AS P.C.B.

1. Release the claws of the 9 P.C.B. holders.

JACK P.C.B.

1. Remove the MAIN P.C.B.
2. Remove the JACK P.C.B. mounting screws (L 4 pcs.).
3. Remove the ground wire mounting screws (M 3 pcs.).

HP P.C.B.

1. Remove the keyboard assembly (see step 4).
2. Remove the HP P.C.B. mounting screws (N 2 pcs.).
3. Pull out the volume control knob.
4. Remove the headphone jack mounting nuts (O 4 pcs.).

ACP P.C.B.

- Release the claws of the AC IN connector bracket.

LCD

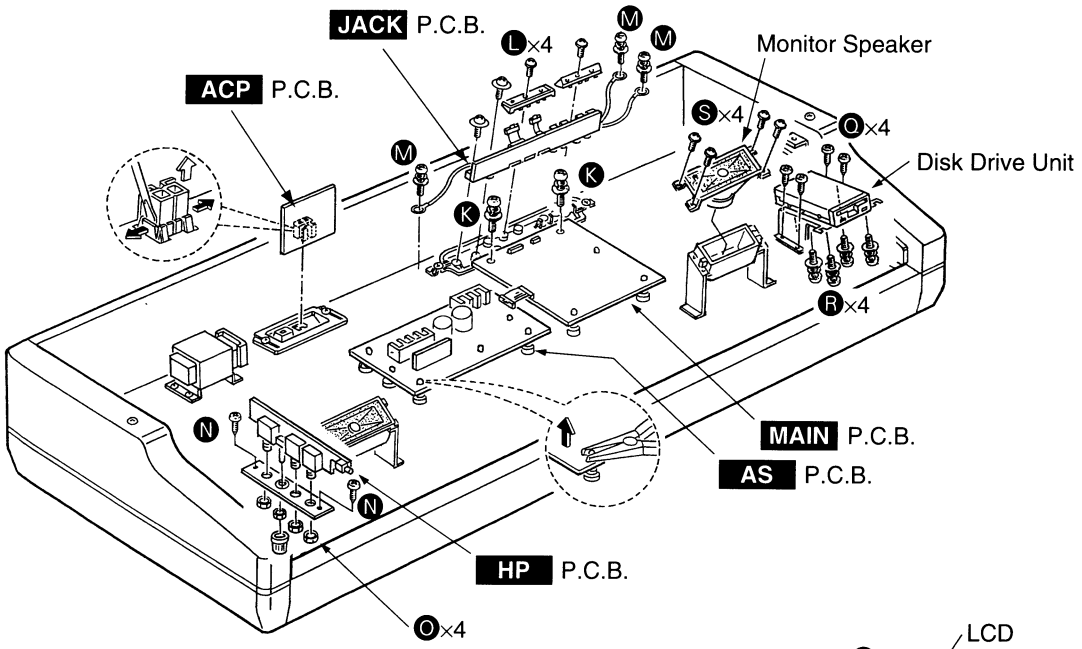
1. Remove the control panel (see step 3).
2. Remove the bracket mounting screws (P 4 pcs.) as shown in Fig. 16.

10 Removing the Disk Drive unit

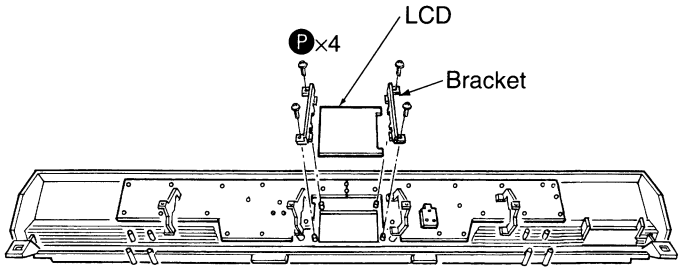
1. Remove the keyboard cover (see step 2).
2. Pull out the connector from the Disk Drive unit.
3. Remove the chassis on which Disk Drive unit is attached (Q 4 pcs.).
4. Remove the Disk Drive unit mounting screws (R 4 pcs.).

11 Removing the monitor speakers

1. Remove the keyboard cover (see step 2).
2. Remove the monitor speaker mounting screws (S 4 pcs.).



[Fig.15]



[Fig.16]

SYMPTOMS WHICH APPEAR TO BE SIGNS OF TROUBLE

The following changes in performance may occur in this instrument but do not indicate trouble.

	Phenomenon	Remedy
Sounds and effects	The buttons, keys, etc. malfunction.	• Turn off the **POWER** button once, then turn it on again. If this procedure is not successful, turn off the **POWER** button once. Then, while pressing the three lower left buttons in the **RHYTHM GROUP** section (**SOUL & DISCO**, **BIG BAND & SWING** and **USA TRAD**) at the same time, turn the **POWER** button on again. (Note that, in this case, all programmable settings, functions and memories return to their factory-preset status.)
	No sound is produced when the keys are pressed.	• The **MAIN VOLUME** is at the minimum setting. Adjust the volume with the **MAIN VOLUME** control. • The volumes for the selected parts are set to the minimum levels. Use the balance buttons to set the volumes of the relevant parts to appropriate levels. • The part is muted. • The LOCAL CONTROL for a part performed on the keyboard is set to OFF. Set the LOCAL CONTROL to ON.
	Only percussive instrument sounds are produced when the keyboard is played.	• In the **SOUND GROUP** section, the **DRUM KITS** button is on.
	The volume is very low when the keyboard is played.	• The volume setting in the **SEQUENCER** contents is very low. Follow the INITIAL procedure to reset the settings.
	Some sounds cannot be selected.	• When the GENERAL MIDI status is set to ON, The sounds which can be selected and operation which can be executed are limited. Turn the GENERAL MIDI status OFF to return the instrument to its normal operation.
	The sound you hear is different from the sound you selected.	• This sometimes occurs when you play back **SEQUENCER** or **COMPOSER** data which was created on a different model, or when MIDI data is received from a connected instrument. Select the desired sounds again.
	The sustain does not work even when the sustain pedal is depressed.	• The sustain pedal is not connected. Connect the pedal cord firmly to the **PEDAL IN** terminal on the back of the instrument. • When the **SUSTAIN PEDAL** button is off, the sustain does not work even when the pedal is depressed. Turn on the **SUSTAIN PEDAL** button.
	The sostenuto pedal and soft pedal do not operate properly. For example, when the soft pedal is depressed, the rhythm starts or a fill-in is played.	• Different functions can be programmed in these pedals. You can return the pedals to their original functions by turning off the instrument once, or by using the PEDAL SETTING mode.

	Phenomenon	Remedy
Rhythm	The rhythm does not start.	• The **DRUMS** volume is set to the minimum level. Use the balance buttons to set the **DRUMS** volume to an appropriate level. • The Classic Ballad rhythm of the **BALLAD** group is selected. Use the **AUTO PLAY CHORD** in your performance. • A **SEQUENCER PLAY** button is on. When you are not playing back the **SEQUENCER** performance, turn off the **SEQUENCER PLAY** button. • CLOCK is set to MIDI. Set CLOCK to INTERNAL. • The rhythm does not work when the GENERAL MIDI mode is set to ON. Turn the GENERAL MIDI status OFF to return the instrument to its normal operation.
AUTO PLAY CHORD	No sound is produced for the automatic accompaniment, or only the sounds of some parts are produced.	• An **ACCOMP** part does not sound if its corresponding volume is set to the minimum level. Use the respective balance buttons to set the **ACCOMP 1**, **2** and **3** volumes to appropriate levels.
SEQUENCER	Storage is not possible.	• The remaining memory capacity of the **SEQUENCER** is 0. Follow the SONG CLEAR or TRACK CLEAR procedure to erase the memory.
	The playback measure indication is different from when the performance was recorded.	• The number of measures corresponds to the time signature of the rhythm selected at the start of recording. To change the rhythm in the middle of the song, record the rhythm change in the RHYTHM part.
COMPOSER	Storage is not possible.	• The remaining memory capacity of the **COMPOSER** is 0.
	Setting the time signature and number of measures is not possible.	• The time signature and number of measures cannot be changed for a pattern which is currently recorded in the **COMPOSER**. If you wish to change the time signature and/or measure data, first follow the procedure to clear the memory.
	The playback timing of the rhythm pattern is different from the timing with which it was recorded.	• The QUANTIZE function was on when the pattern was recorded and the timing was automatically corrected. Set the quantize level to a smaller note unit or to OFF when recording.

	Phenomenon	Remedy
Disk Drive	The Disk Drive produces a noise during recording or playback.	• This occurs when the Disk Drive is reading a disk. It does not indicate a problem.
	When the procedure to load from a disk is performed, the contents of the instrument's memory are erased.	• When performing the load operation from a disk, this instrument's memory changes to that of the data loaded from the disk. If you wish to preserve a song which is stored in the instrument's memory, save it on a disk before performing the load procedure.
MIDI	Data cannot be exchanged through MIDI terminals.	• The switch for the **COMPUTER** terminal is not set to **MIDI**. Turn off the power to this instrument and set the switch to **MIDI**. • Match the channels on the transmitting side and the receiving side.
	The sound quavers or is distorted.	• When the **COMPUTER** terminal or both the **MIDI IN** and **OUT** terminals are connected to a computer, depending on the computer software the received data may be sent back to the instrument just as it is. Because of this the sound generated from the keys and the sound generated from the returned data are both produced, causing undesirable effects, such as the sounds canceling each other out, for example. In this case, either change the software settings to prevent received data from being returned, or set the MIDI LOCAL CONTROL to off.
Other	Noise from a radio or TV can be heard.	• This sometimes occurs when electrical equipment such as a radio or TV is used near the instrument. Try moving such electrical equipment further away from the instrument. • The sound may be coming from a nearby broadcast station or amateur radio station. If the sound is bothersome, consult your dealer or service center.
	The cabinet becomes warm during use.	• This instrument has a built-in power source that heats the cabinet to some degree. This is not an indication of trouble.

ERROR DISPLAY

No.	Contents
00	The data on the disk that you are using is for a different product.
01	An error has occurred while the disk was loading. Please try again!
02	There is no disk in the Disk Drive.
03	The file that you tried to load is empty.
05	An error has occurred while the disk was saving. Please try again!
06	The disk that you are using is write protected. Please remove the write protection and try again.
07	The disk that you are using is full. Please use another disk.
08	An error has occurred while the disk was formatting. The disk that you are using may be faulty. Please try formatting another disk.
10	The data is already copy protected.
15	The song you are trying to save is empty.
16	This STANDARD MIDI FILE is incompatible with the PR and cannot be loaded.
17	This is not a STANDARD MIDI FILE.
18	The timebase (PPQ resolution) that you tried to load is not 24/48/96/192/288/384 PPQ.
19	This is a FORMAT 1 MIDI FILE disk and cannot be played back.
20	A problem has occurred with your **SEQUENCER** Data. This might be due to a damaged or faulty disk.
21	Memory full
22	It is necessary to press PUNCH OUT to complete this procedure.
23	It is impossible to change the time signature because it has already been set in the existing tracks.
24	A rhythm track already exists. It is impossible to assign two tracks to rhythm.

No.	Contents
25	It is only possible to change the velocity on a melody track.
26	It is only possible to merge melody tracks. Tracks such as rhythm, chord and control cannot be merged.
27	It is only possible to copy melody tracks. Tracks such as rhythm, chord and control cannot be copied.
28	This song is too long to be saved as a MIDI file.
29	The MIDI file that you have tried to load exceeds the memory capacity of this instrument and cannot be played. The **SEQUENCER** memory has been cleared.
30	It is not possible to change the time signature or measure length of a **COMPOSER** pattern after it has been recorded. If you want to proceed, you must first clear the entire **COMPOSER** pattern.
31	The time signature of the pattern from which you are copying is different from the **COMPOSER** memory that you are using. Either: Change the time signature of the **COMPOSER** memory or: Copy from a pattern that has the same time signature
32	Memory full
33	Select a Track before setting parameters for AUTO PUNCH RECORD.
43	The file that you are trying to load was saved on a previous KN keyboard. It is only possible to load using the "PERFORMANCE" option.
46	It is only possible to insert MELODY Tracks. Tracks such as RHYTHM, CHORD and CONTROL cannot be inserted.
47	This procedure is not possible with a composer pattern or the metronome. Please select a preset rhythm pattern.
54	Please select a USER bank.

No.	Contents
55	Special tracks such as CHORD (APC), RHY and CTL exist in the song from which you are copying and are incompatible with the destination song because it is in the GM mode.
56	AUTO PUNCH recording has been unsuccessful because **SEQUENCER** operation was interrupted before the PUNCH OUT measure was reached.
58	The song that you have tried to load exceeds this instrument's available memory and cannot be loaded. The selected song memory has been cleared. Please clear existing songs in the instrument's memory using SONG CLEAR to make more memory available, and try again.
59	RKB and LKB are special tracks for compatibility with SEQUENCER data from previous PR products. They cannot be edited or recorded on.
60	RKB and LKB are special tracks which cannot be used in conjunction with RIGHT 1, RIGHT 2, LEFT and APC tracks. Please re-assign RKB and LKB to any other part and try again.
62	The computer connection is not active because the computer port switch is set to MIDI. Please turn the power off, set the switch to the desired setting and turn the power back on.
64	Please select the Panel Memory that you want to name.
65	It is not possible to use the CHORD FINDER in this mode. Please select CHORD FINDER from HOME page or CHORD STEP RECORD page.
66	SOLO pads are special pads which include Chord information. Pleases use SOLO pads when the rhythm and accompaniment is playing.
67	There are no APC or CHORD tracks. Select and APC track or CHORD track, and try again.
68	It is not possible to record directly into the SOLO pads. Record on the SEQUENCER and Copy the melody and chord information into a SOLO pad.

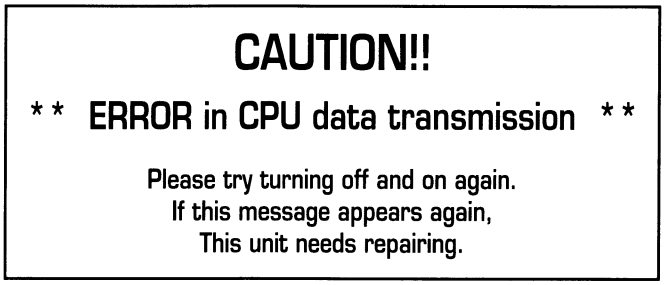
ABOUT THE SELF-DIAGNOSTIC FUNCTION

This model has some self-diagnostic capabilities. There are two types of self-diagnostic functions: the "power on self-test" which runs a test when the power is turned on and notifies the user if an error is detected, and the "service mode" which is used when servicing the unit.

■ Power on self-test

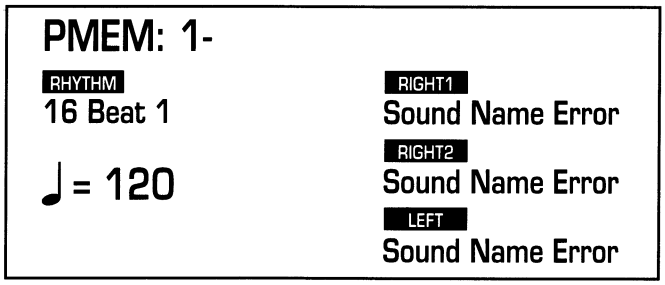
This model runs the following self-diagnostic test when power is turned on. If an error is detected, a message is displayed on the LCD to notify the user.

1. **Communication check between the Control Panel CPU (CPL P.C.B.: IC1/CPR P.C.B.: IC1) and the MAIN CPU (MAIN P.C.B.: IC5)**
   When power is turned on, the model checks communications between the MAIN CPU and each Control Panel CPU. If an error is detected, the following message is displayed on the LCD.


CAUTION!!
** ERROR in CPU data transmission **
Please try turning off and on again.
If this message appears again,
This unit needs repairing.

   If this error occurs, perform the Control Panel CPU check from within the service mode. Using the self-diagnostic function, it is possible to determine which CPU (CPL/CPR P.C.B.) is suffering trouble.

2. **Communication check between the MAIN CPU (Main P.C.B.: IC5) and SUB CPU (MAIN P.C.B.: IC27)**
   When power is turned on or when a communication error occurs between the MAIN CPU and the SUB CPU while using the instrument, the message "Sound Name Error" is displayed in the sound name display position.



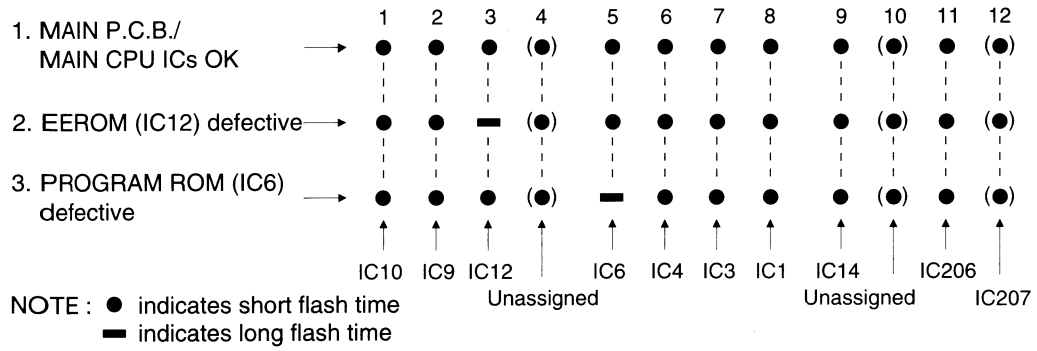
   If this message is displayed, it is likely that some sort of error has occurred in the control signal line used in communications between the MAIN CPU and SUB CPU. The error also occurs when the SUB CPU is not functioning properly.
   It will take about 30 seconds for this message to appear on the LCD. If nothing apears, wait a moment with the power on to confirm the message. When the message is finally displayed, run the following tests from the service mode.

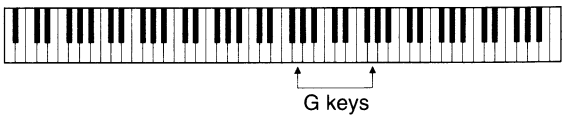
■ Service mode

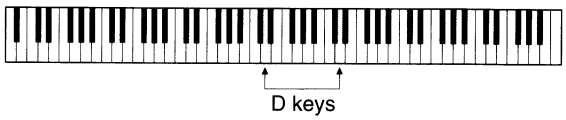
The service mode makes it possible to determine whether the various test modes pass or fail.
The test modes in the following table are presented in an order based on circuit operation, but they are completely independent of one another. Select a mode as necessary, and run the test or check.

<table>
<tr><th>No.</th><th>Diagnostic Part/Diagnostic Device</th><th>Procedure of Service Mode</th></tr>
<tr><td>1</td><td>MAIN P.C.B.: MAIN CPU peripheral device
1. DRAM (IC10)
2. DRAM (IC9)
3. EEROM (IC12)
4. Unassigned
5. PROGRAM ROM (IC6)
6. PROGRAM ROM (IC4)
7. TABLE DATA ROM (IC3)
8. TABLE DATA ROM (IC1)
9. RHYTHM DATA ROM (IC14)
10. Unassigned
11. LCD CONTROLLER (IC206)
12. VIDEO RAM (IC207)</td><td>1. Connect the CHECKING DEVICE (refer to page I-21) to CN11 on the MAIN P.C.B..
2. Turn on the power switch while holding down the CHECKING DEVICE switch.</td></tr>
<tr><td colspan="3">When the power swich is turned on, the LED of the CHECKING DEVICE flashes 12 times . The order of the LED flashes corresponds to the IC number on the respective P.C.B.s as shown below. If an IC is defective, the corresponding flash time is longer.

Examples

 
1 2 3 4 5 6 7 8 9 10 11 12
1. MAIN P.C.B./ MAIN CPU ICs OK
2. EEROM (IC12) defective
3. PROGRAM ROM (IC6) defective
IC10 IC9 IC12 IC6 IC4 IC3 IC1 IC14 IC206
Unassigned
Unassigned
IC207

NOTE : ● indicates short flash time
▬ indicates long flash time</td></tr>
<tr><td>2</td><td>LCD test</td><td>Turn on the power switch while holding down the two G keys shown below.
 
</td></tr>
<tr><td colspan="3">While the message “LCD PANEL TEST” is displayed on the LCD, the entire screen is repeatedly switched in the order of white → black → “H” pattern→ red→ blue→ green.
* “H” pattern is a big “H”. It is used to check for crosstalk.</td></tr>
</table>

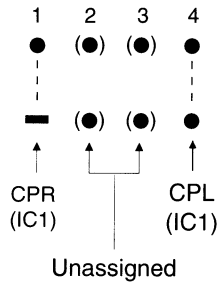
No.	Diagnostic Part/Diagnostic Device	Procedure of Service Mode
3	CPR/CPL P.C.B.: 1 chip Microcomputer (IC1) check	1. In case the LCD is defective, connect the CHECKING DEVICE to CN11 on the MAIN P.C.B. (refer to page I-21). 2. Turn on the power switch while holding down the two D keys shown below and the CHECKING DEVICE switch if connected. 

The results of the test will be displayed on the LCD with "PANEL CPU CHECKING" message.
In case the CHECKING DEVICE is connected, the LED of the CHECKING DEVICE flashes 4 times when the power swich is turned on. The order of the LED flashes corresponds to the Microcomputer (IC) number on the respective P.C.B.s as shown below. If an IC is defective, the corresponding flash time is longer.

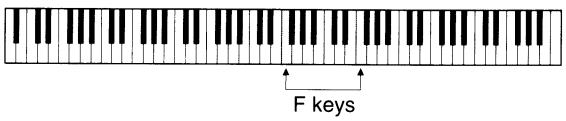
Examples

1. CPR (IC1), CPL (IC1) OK

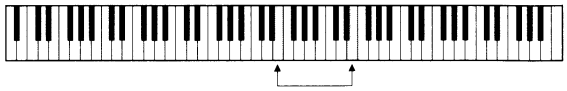
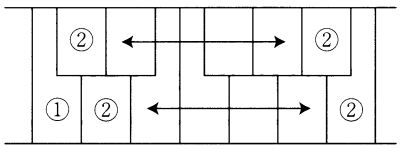
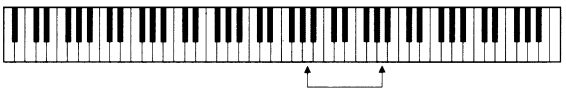
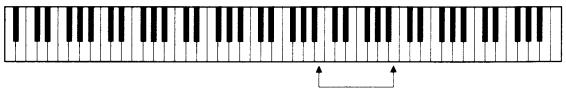
2. CPR (IC1) defective, CPL (IC1) OK



NOTE : ● indicates short flash time
▬ indicates long flash time

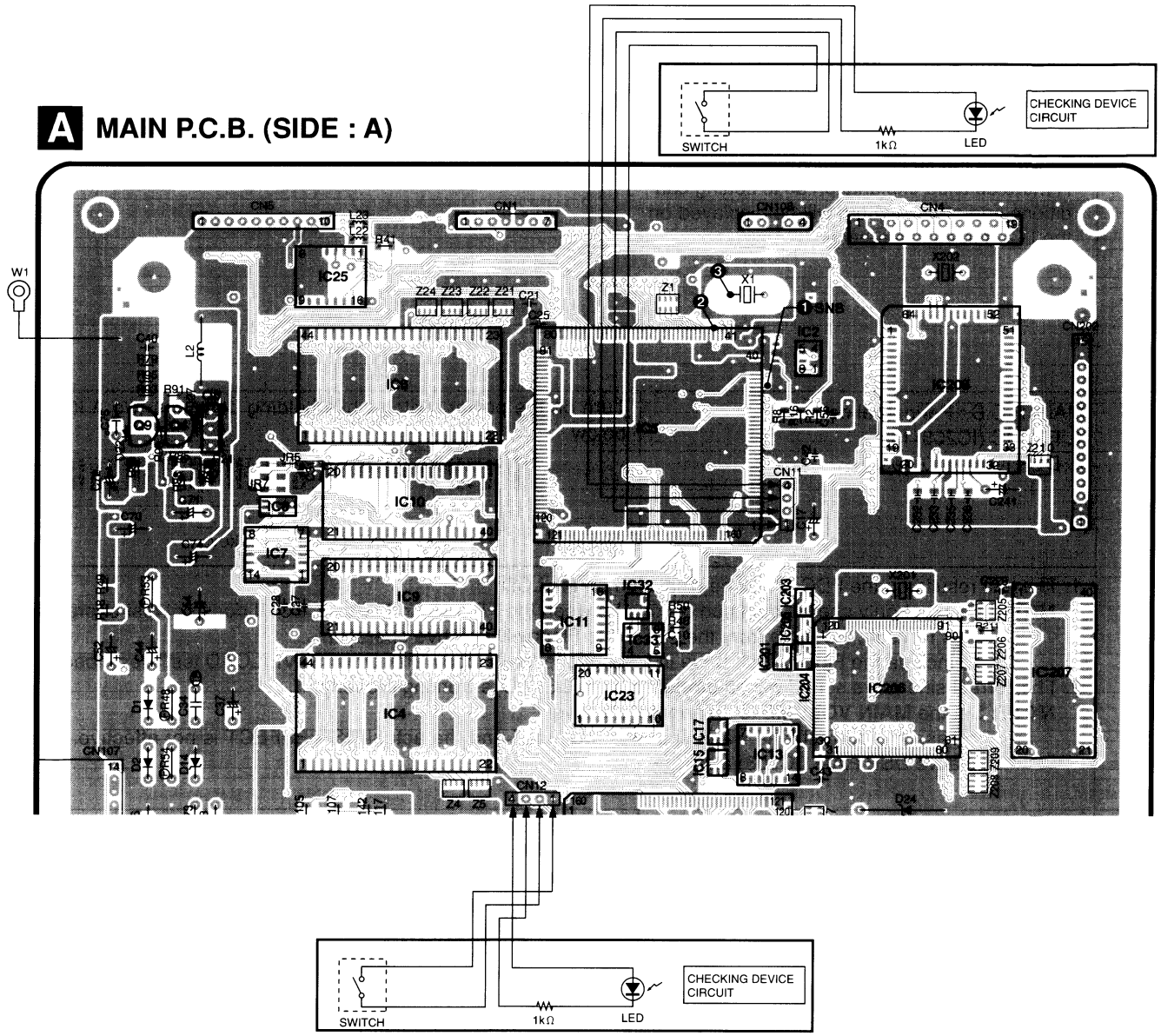
4	CPR/CPL P.C.B.: Control Panel switch and LED check	Turn on the power switch while holding down the two F keys shown below. 

First, all of the LEDs on the Control Panel will light up simultaneously. Check that they do. Then, press the buttons on the Control Panel and confirm that the corresponding LED lights. For buttons without LEDs, the 4 BEAT display LEDs by the START/STOP button will light up simultaneously.
• To light up all of the LEDs on the Control Panel, press **DEMO** button.

<table>
<tr><th>No.</th><th>Diagnostic Part/Diagnostic Device</th><th>Procedure of Service Mode</th></tr>
<tr><td rowspan="2">5</td><td>MAIN P.C.B.:
Wave ROM (IC104-107) check</td><td>Turn on the power switch while holding down the two E keys shown below.
 
E keys</td></tr>
<tr><td>When set to the self-diagnostic mode, the Wave ROM output a sine wave. The Wave ROMs correspond to the keyboard keys as shown in the diagram to the right. When a key is pressed, the corresponding sine wave sound is produced. If no sound is produced, or if the sound is distored, the Wave ROM corresponding to the key is defective.
* A more detailed explanation as to setting conditions and other matters will be displayed on the LCD for your reference.</td><td>The key number indicates the Wave ROM number.
(①: IC104/105, ②: IC106/107)
 
</td></tr>
<tr><td rowspan="2">6</td><td>MAIN P.C.B.: Peripehral devices
1. FDC IC (IC208) test
2. DSP IC (IC110) test</td><td>Turn on the power switch while holding down the two A keys shown below.
 
A keys</td></tr>
<tr><td colspan="2">1. The test results on the FDC IC will be displayed on the LCD.
NOTE: This test only checks communications between the FDC IC and MAIN CPU. It does not test operation of the FDC IC itself, the route from the FDC IC to Floppy Disk Drive operation.
To include the Floppy Disk Drive in testing, use the "Floppy Disk Drive SAVE/LOAD test" described below.
2. The correct sine wave sound will be produced if the DSP IC is working properly.
NOTE: Set the MAIN VOLUME to an appropriate level.
In case the correct sine wave sound is produced and the actual DSP EFFECT is not effective, check the relative DSP RAM (IC108) also.</td></tr>
<tr><td rowspan="2">7</td><td>Floppy Disk Drive:
SAVE/LOAD test</td><td>1.Insert the floppy disk formatted into the Disk Drive.
2.Turn on the power switch while holding down the two B keys shown below.
 
B keys</td></tr>
<tr><td colspan="2">Pressing the button below the " ▶ " displayed on the LCD starts the Floppy Disk Drive SAVE/LOAD test. The test is carried out repeatedly.
Data is saved and loaded, and then the two data sets are compared. The number of times the test results "OK" or "NG" are counted and displayed on the LCD. To stop the test, press the button below the " ■ " displayed on the LCD.

Even when the Floppy Disk Drive is functioning properly, the test can result "NG". If this happens frequently, clean the magnetic heads of the Floppy Disk Drive with a cleaning disk. Then, change the disk used in testing with another disk and reperform the test. If the trouble is not solved, it is likely that the Disk Drive unit or some other part of the hardware is broken.</td></tr>
</table>

■ Connection between serving CHECKING DEVICE and MAIN P.C.B.



PRECAUTIONS BEFORE SERVICING THE MAIN CIRCUIT

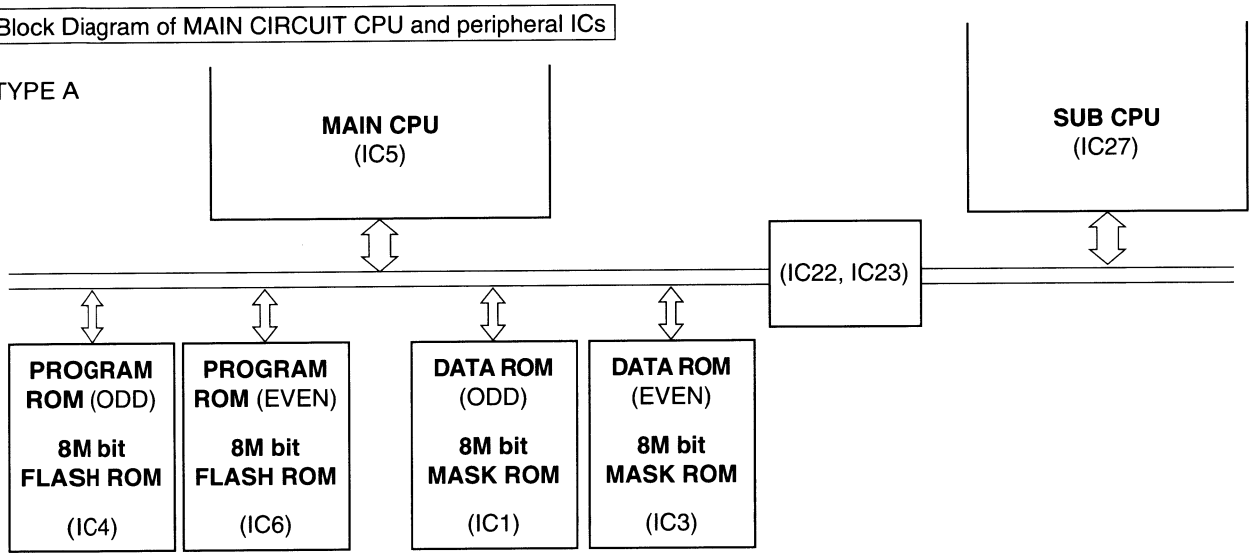
Note: In the initial production (over several months) of this model (Type A), FLASH ROMs (EEPROM) were used for the PROGRAM ROMs. In models produced thereafter (Type B), FLASH ROMs were not used. If changing any of these ICs, service the MAIN CIRCUIT as explained here following.

■ About the FLASH ROM

The FLASH ROM can be electrically erased and rewritten. This model is designed so that the repair technician can easily write and change programs in the FLASH ROM, by using a floppy disk.

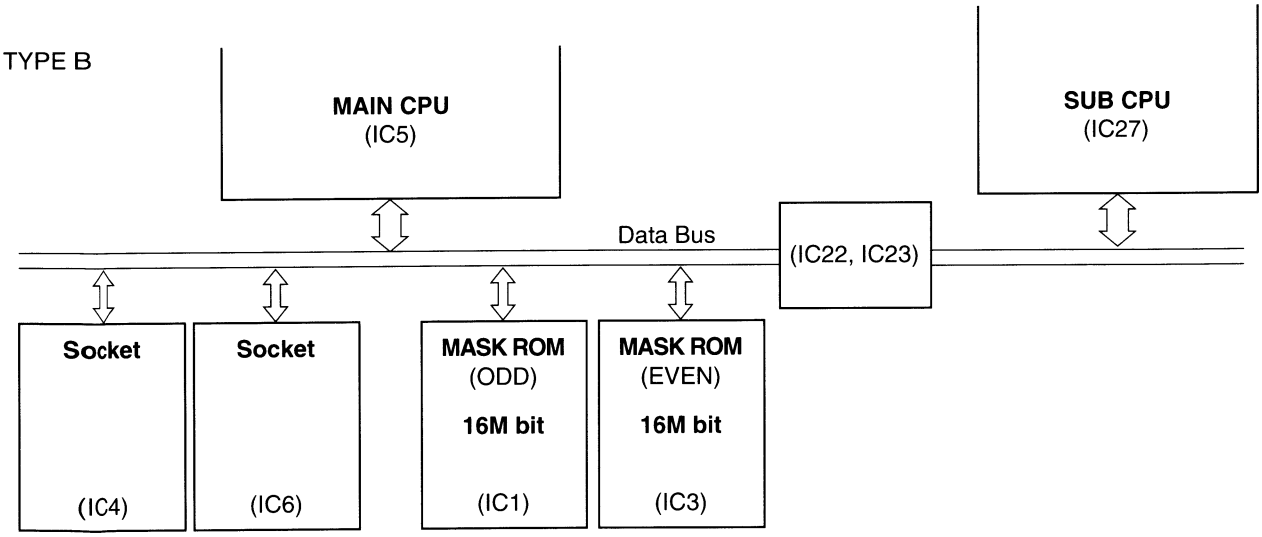
Block Diagram of MAIN CIRCUIT CPU and peripheral ICs

TYPE A



* FLASH ROM contents
IC4: MAIN CPU program (ODD)
IC6: MAIN CPU program (EVEN)

TYPE B



■ How to distinguish Type A from Type B

While pressing **PANEL MEMORY** buttons **1**, **2** and **3** at the same time, turn the power on. The model type can be determined from the resulting display.

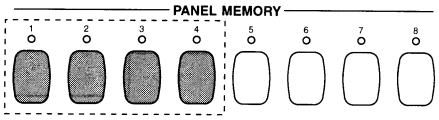
For Type A, "DEVICE=FLASH ROM" is shown on the display.
For Type B, "DEVICE=MASK ROM" is shown on the display.

■ Notes on replacing FLASH ROMs for Type A

The replacement parts include a FLASH ROM with a available memory and the "PROGRAM DISK" which contains the program to be written into the FLASH ROM. After replacing the FLASH ROM, always write the program into it from the floppy disk included in the replacement parts. For details on programming, see "How to write (update) the program to the FLASH ROMs for Type A (or for Type B in which the FLASH ROMs has been installed in the sockets" below.

■ How to write (update) the program to the FLASH ROMs for Type A (or for Type B in which the FLASH ROMs has been installed in the sockets)

① Load the "PROGRAM DISK" included in the replacement parts into the Floppy Disk Drive.
② Hold down the **PANEL MEMORY** buttons **1**, **2**, **3** and **4**, and turn on the power switch.
③ Check "Flash Memory Update" is displayed on the LCD. Only then, release the **PANEL MEMORY** buttons.
The program will be written into the FLASH ROM automatically.



④ When the operation is complete, "Completed!!" will be displayed on the LCD. Turn the power switch off and then back on again. Check the instrument is functioning properly.

■ How to write (update) the program for Type B

Follow the steps below to write (update) the program for Type B model in which the FLASH ROMs have not been installed.
① Install the FLASH ROMs in the unused sockets.
② Change the jumper wire settings as follows:
Discontinued: JR6, JR8, JP10
Added: JR5, JR7, JP11
③ Write the program in the same manner as for Type A, above.

MIDI IMPLEMENTATION CHART

Digital Ensemble [SX-PR902R/PR902C] **(Transmitted)**

Function		RIGHT1,2,LEFT, PART4～15	PART16	ACMP1	ACMP2,3	BASS	DRUMS	CHORD	CONTROL	Remarks
Basic Channel	Default	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	memorized
	Changed	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	
Mode	Default	3	3	3	3	3	3	3	3	OMNI OFF,POLY MODE
	Messages	×	×	×	×	×	×	×	×	
	Altered	–	–	–	–	–	–	–	–	
Note Number		0-119	0-127	0-119	0-119	0-119	0-127	0-119	–	Changes depending on the position of the transpose control,octave shift,and drums type.
	True voice	–	–	–	–	–	–	–	–	
Velocity	Note ON	○	○	○	○	○	○	○	–	
	Note OFF	×	×	×	×	×	×	×	–	
After Touch	Key's	×	×	×	×	×	×	×	–	Transmitted during SEQUENCER playback.
	Ch's	○×*	×	×	×	×	×	×	–	
Pitch Bend		○×*	×	○×*	○×*	○×*	×	○×*	×	Transmitted during SEQUENCER playback and during rhythm performance.
Control Change	0,32	○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	bank select MSB, LSB
	1	○×*	×	○×*	○×*	○×*	×	○×*	×	modulation
	6,38	○×*	×	×	×	×	×	×	×	data entry MSB, LSB
	7	○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	volume
	10	○×*	×	○×*	○×*	○×*	×	×	×	panpot
	11	○×*	○×*	○×*	○×*	○×*	○×*	×	×	expression
	64	○×*	×	○×*	○×*	○×*	×	×	×	sustain
	66	○	×	×	×	×	×	×	×	sostenuto
	67	○	×	×	×	×	×	×	×	soft
	80	×	×	○×*	×	×	×	×	×	auto play chord
	82	×	×	×	×	×	○×*	×	×	intro, fill in, ending
	83	×	×	×	×	×	×	×	○×*	fade in／out
	91	○×*	○×*	○×*	○×*	○×*	○×*	○×*	○×*	reverb
	93	○×*	○×*	×	×	×	×	×	×	DSP effect
	94	○×*	×	○×*	○×*	○×*	×	○×*	×	digital effect
	95	○×*	○×*	×	×	×	×	×	○×*	piano ambience
	100,101	○×*	×	×	×	×	×	×	×	RPN LSB, MSB
	120	○	○	×	×	×	×	×	×	all sound off
	121	○×*	○×*	×	×	×	×	×	×	reset all cotrollers
Prog Change		○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	Changes depending on program change mode and prog.cng to p.mem.
	True #	–	–	–	–	–	–	–	–	
System exclusive		○								
System common	Song Pos	○×*								
	Song Sel	○×* (0-19)								
	Tune	×								
System Real Time	Clock	○								
	Commands	○×*								start／stop,continue
Aux Messages	Local ON／OFF	×	×	×	×	×	×	×	–	
	All notes OFF	×	×	×	×	×	×	×	–	
	Active Sense	○								
	Reset	×								
Notes		○×*……Whether or not the data for each of these items is transmitted can be set.								

Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO ○:Yes
Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO ×:No

Digital Ensemble [SX-PR902R/PR902C] **(Recognized)**

Function		RIGHT1,2,LEFT, PART4～15	PART16	ACMP1	ACMP2,3	BASS	DRUMS	CHORD	CONTROL	Remarks
Basic Channel	Default	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	memorized
	Changed	1-16	1-16	1-16	1-16	1-16	1-16	1-16	1-16	
Mode	Default	3	3	3	3	3	3	3	3	OMNI OFF,POLY MODE
	Messages	×	×	×	×	×	×	×	×	
	Altered	–	–	–	–	–	–	–	–	
Note Number		0-127	0-127	0-127	0-127	0-127	0-127	0-127	–	Changes depending on the position of the transpose control,octave shift, and drums type.
	True voice	0-127	0-127	0-127	0-127	0-127	0-127	0-127	–	
Velocity	Note ON	○	○	○	○	○	○	○	–	
	Note OFF	×	×	×	×	×	×	×	–	
After Touch	Key's	×	×	×	×	×	×	×	–	
	Ch's	○×*	×	×	×	×	×	×	–	
Pitch Bend		○×*	×	○×*	○×*	○×*	×	○×*	×	
Control Change	0,32	○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	bank select MSB, LSB
	1	○×*	×	○×*	○×*	○×*	×	○×*	×	modulation
	6,38	○×*	×	×	×	×	×	×	×	data entry MSB, LSB
	7	○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	volume
	10	○×*	×	○×*	○×*	○×*	×	×	×	panpot
	11	○×*	○×*	○×*	○×*	○×*	○×*	×	×	expression
	64	○×*	×	○×*	○×*	○×*	×	×	×	sustain
	66	○	×	×	×	×	×	×	×	sostenuto
	67	○	×	×	×	×	×	×	×	soft
	80	×	×	○×*	×	×	×	×	×	auto play chord
	82	×	×	×	×	×	○×*	×	×	intro, fill in, ending
	83	×	×	×	×	×	×	×	○×*	fade in／out
	91	○×*	○×*	○×*	○×*	○×*	○×*	○×*	○×*	reverb
	93	○×*	○×*	×	×	×	×	×	×	DSP effect
	94	○×*	×	○×*	○×*	○×*	×	○×*	×	digital effect
	95	○×*	○×*	×	×	×	×	×	○×*	piano ambience
	100,101	○×*	×	×	×	×	×	×	×	RPN LSB, MSB
	120	○	○	○	○	○	○	○	×	all sound off
	121	○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	reset all cotrollers
Prog Change		○×*	○×*	○×*	○×*	○×*	○×*	○×*	×	Changes depending on program change mode and prog.cng to p.mem.
	True #	0-127	0-127	0-127	0-127	0-127	0-127	0-127	–	
System exclusive		○								
System common	Song Pos	○×*								
	Song Sel	○×* (0-19)								
	Tune	×								
System Real Time	Clock	○								
	Commands	○×*								start／stop,continue
Aux Messages	Local ON／OFF	×	×	×	×	×	×	×	–	
	All notes OFF	○	○	○	○	○	○	○	–	
	Active Sense	○								
	Reset	×								
Notes		○×*……Whether or not the data for each of these items is received can be set.								

Mode 1: OMNI ON, POLY Mode 2: OMNI ON, MONO ○:Yes
Mode 3: OMNI OFF, POLY Mode 4: OMNI OFF, MONO ×:No

PRECAUTIONS BEFORE SERVICING

■ Precautions for measuring of the output waveforms.

1. The waveform was measured with a "National Digital Storage Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may differ somewhat due to the difference in the timing of triggering.
2. Since the 1/10 test probe is used, the indicated voltage value on the bottom part of each waveform illustration is 1/10 of the actual value (e.g. 0.2 V/cm should be 2.0 V/cm).
3. To measure the waveforms, first set this unit to the self-diagnostic mode (refer to page I-20, No. 5). The Wave ROM output will then be output as a sine wave to facilitate the servicing check.

■ Important safety notice:

Components identified by a ⚠ mark have special characteristics impotant for safety.
When replacing any of these components, use only manufacture's specified parts.

■ Symbolic Marks

The symbolic marks for resistors and capacitors which used in this circuits are classified as following TABLE-1 and TABLE-2.

1. RESISTORS
   - Resistors without symbolic mark are FIXED CARBON FILM RESISTORS (ERD-type).
   - All resistors are 1/4 WATT, ±5 % TOLERANCE unless otherwise designated in schematic diagrams.

(TABLE-1)

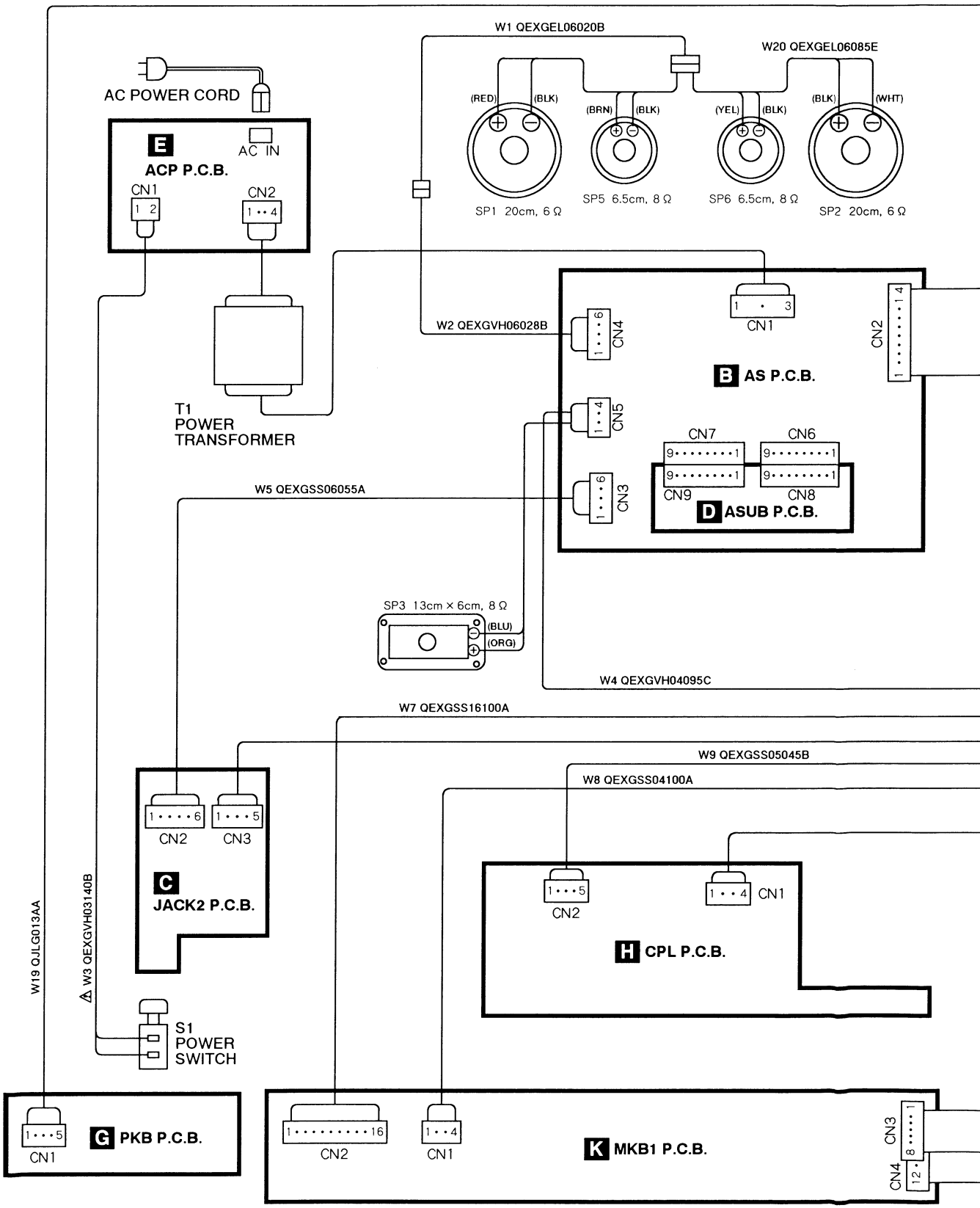
SYMBOL	SPECIFICATION	SYMBOL	SPECIFICATION
Ⓕ	Fixed Carbon Film Resistors "FLAME-PROOF" (ERD—F—type)	Ⓕ	Fixed Metal Film Resistors "FLAME-PROOF" (ERX—type)
Ⓕ	Fixed Wire Wound Resistors "FLAME-PROOF" (ERF—type)	[F]	Fuse Type Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERQ—type)
Ⓕ	Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERG—type)	[F]	Fuse Type Fixed Carbon File Resistors "FLAME-PROOF" (ERD2FC—type)
Ⓖ	Fixed Metal Film Resistors (Precision and High Stability) (ERO—type)		

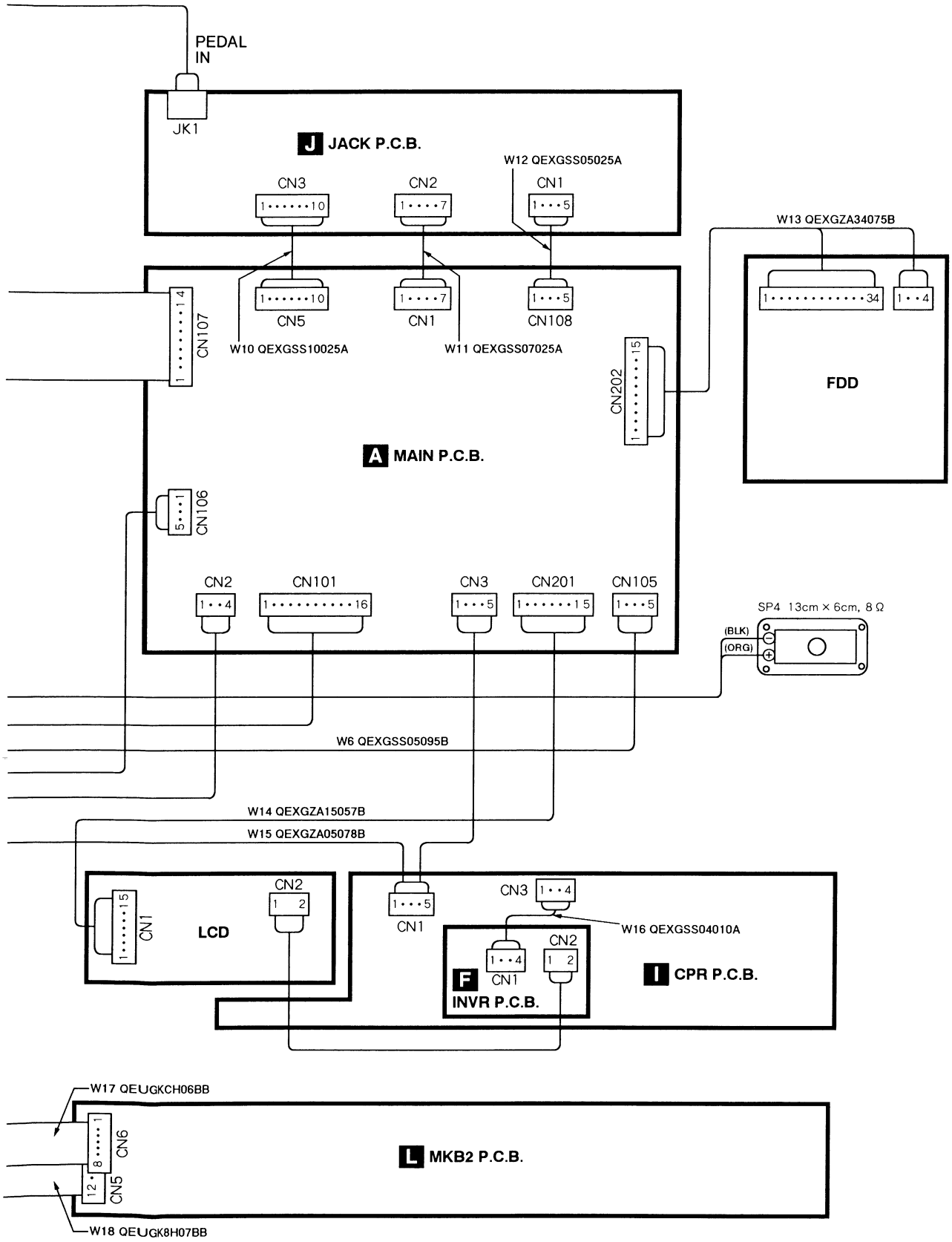
2. CAPACITORS
   - Capacitors without symbolic mark are POLYESTER CAPACITORS. (ECQM-type, ECQG-type, ±10 % Tolerance)
   - Polarized capacitors without symbolic mark are Aluminum Electrolytic Capapcitors. (ECEA-type, ±20 % Tolerance)

(TABLE-2)

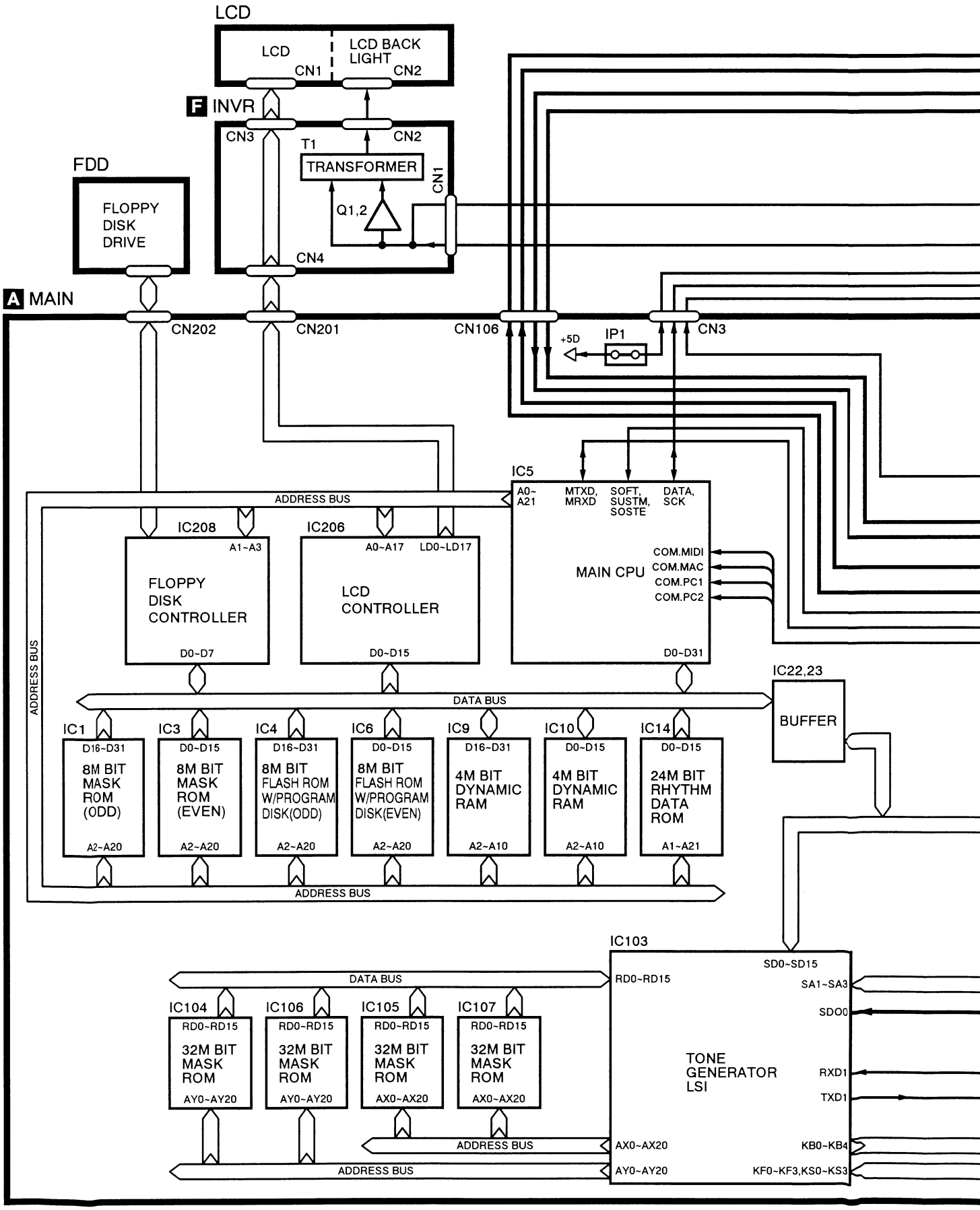
SYMBOL	SPECIFICATION	TYPE
Ⓝ	Non-Polarized Electrolytic Capacitors	ECEA_KN_type
Ⓨ	Non-Polarized Electrolytic (for Network system)	ECEA_Y_type
Ⓣ	Tantalum Solid Electrolytic Capacitors	ECS_type
TF	Metalized Plastic Film Capacitors (TF Series)	ECQV_type
○	Temperature Compensating Ceramic Capacitors	ECC_type
	High-Dielectric Constant Ceramic Capacitors	ECK_type ECR_type
	Axial Lead Ceramic Capacitors	ECB_type
	Metalized Polyester Film Capacitors for Across the Line	ECQ_EW_type
	Aluminum Electrolytic Capacitors for Smoothing Circuit	ECES_type
	Multilayer Ceramic Chip Capacitors	ECUV_type

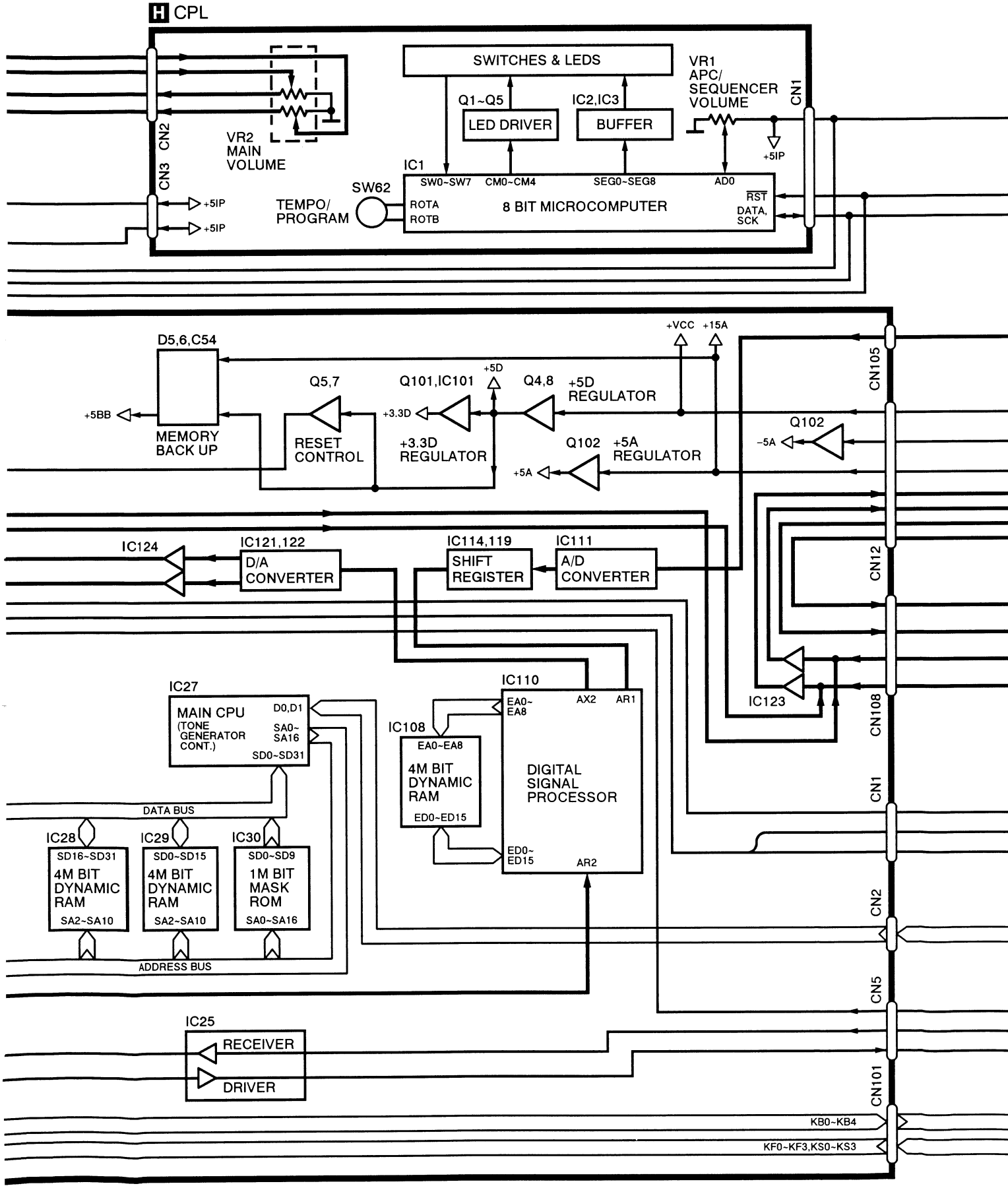
■WIRING CONNECTION Diagram

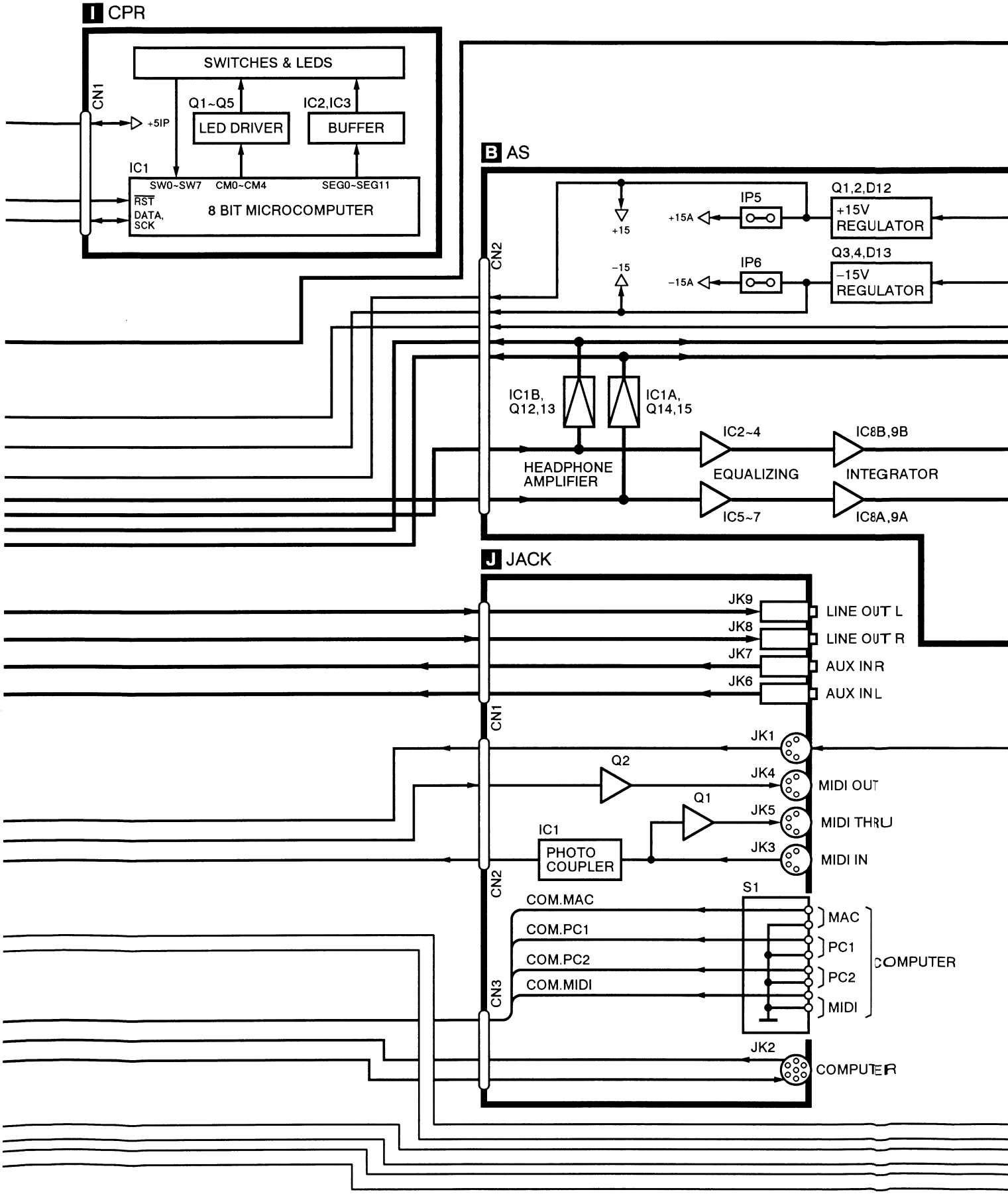


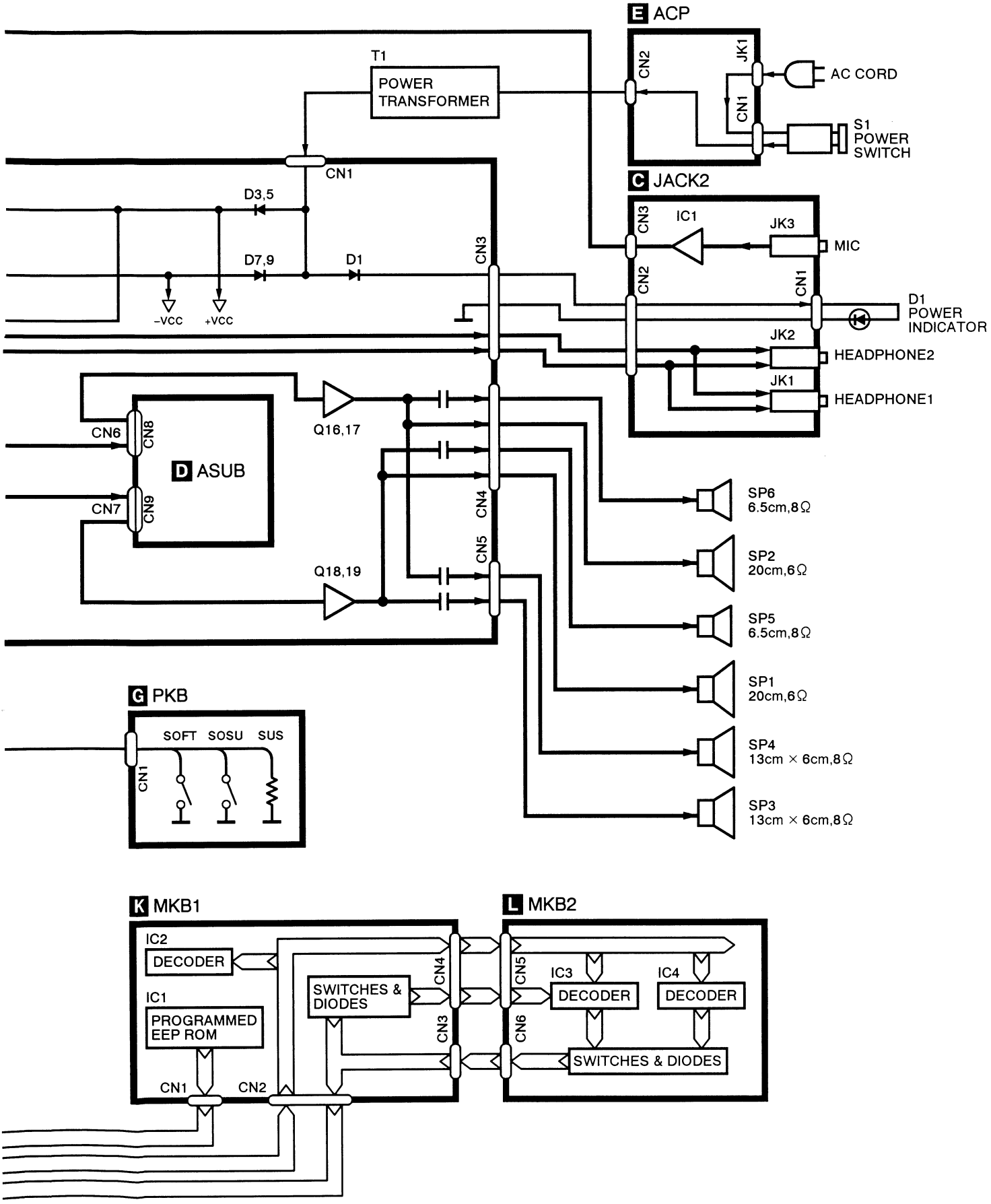

PEDAL
IN
JK1
J JACK P.C.B.
W12 QEXGSS05025A
CN3
CN2
CN1
W13 QEXGZA34075B
CN5
CN1
CN108
CN107
W10 QEXGSS10025A
W11 QEXGSS07025A
CN202
FDD
A MAIN P.C.B.
CN106
CN2
CN101
CN3
CN201
CN105
SP4 13cm × 6cm, 8 Ω
(BLK)
(ORG)
W6 QEXGSS05095B
W14 QEXGZA15057B
W15 QEXGZA05078B
LCD
CN1
CN2
CN1
CN3
W16 QEXGSS04010A
F
INVR P.C.B.
CN2
CN1
I CPR P.C.B.
W17 QEUGKCH06BB
CN6
CN5
L MKB2 P.C.B.
W18 QEUGK8H07BB

■BLOCK Diagram



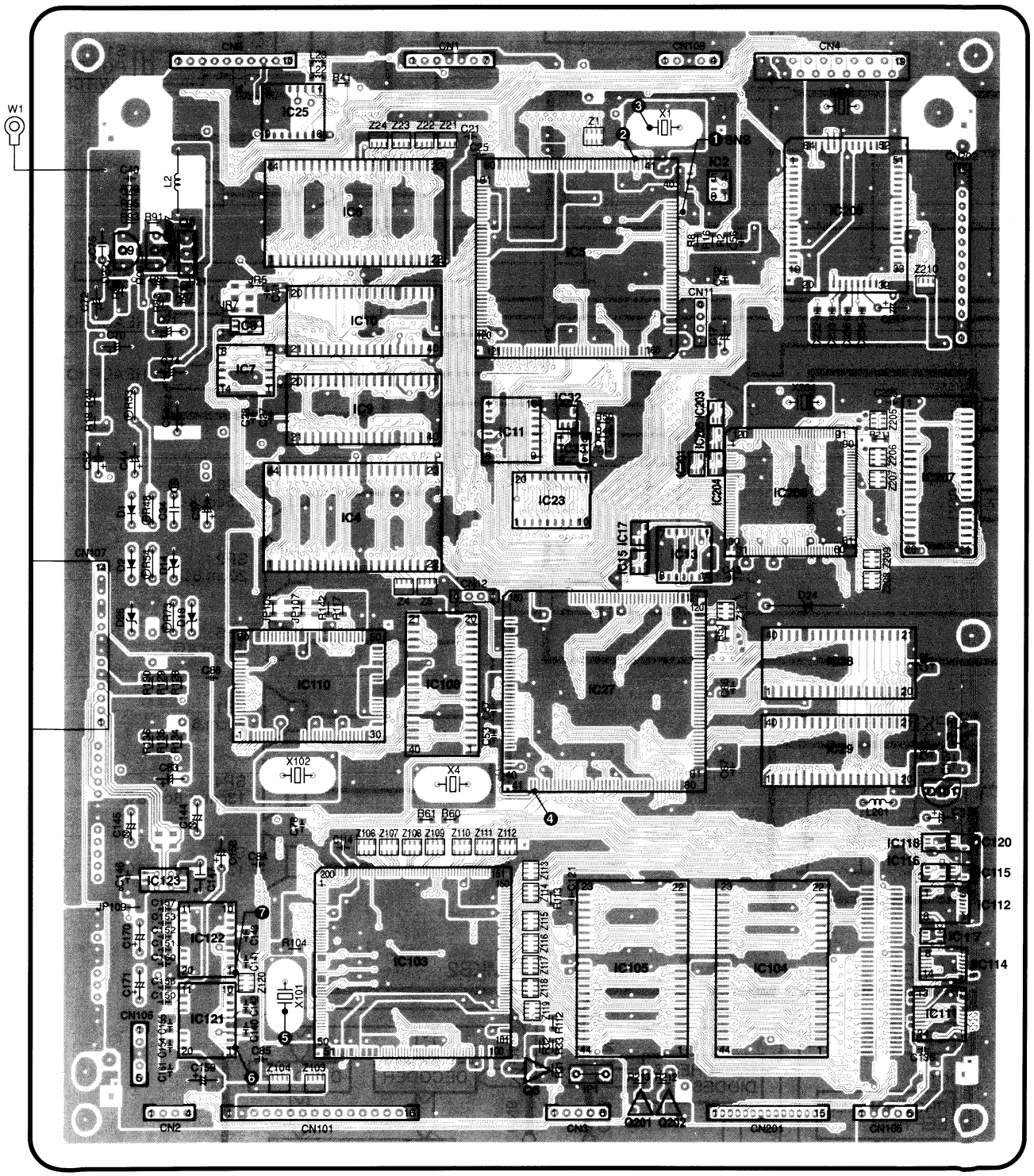

H CPL
SWITCHES & LEDS
VR1
APC/
SEQUENCER
VOLUME
CN1
Q1~Q5
LED DRIVER
IC2,IC3
BUFFER
VR2
MAIN
VOLUME
CN2
CN3
+5IP
IC1
SW0~SW7
CM0~CM4
SEG0~SEG8
AD0
SW62
TEMPO/
PROGRAM
ROTA
ROTB
8 BIT MICROCOMPUTER
RST
DATA,
SCK
+VCC
+15A
D5,6,C54
+5BB
MEMORY
BACK UP
Q5,7
RESET
CONTROL
Q101,IC101
+5D
+3.3D
+3.3D
REGULATOR
Q4,8
+5D
REGULATOR
Q102
+5A
REGULATOR
-5A
CN105
CN12
IC124
IC121,122
D/A
CONVERTER
IC114,119
SHIFT
REGISTER
IC111
A/D
CONVERTER
IC123
CN108
IC27
MAIN CPU
(TONE
GENERATOR
CONT.)
D0,D1
SA0~
SA16
SD0~SD31
IC110
EA0~
EA8
AX2
AR1
IC108
EA0~EA8
4M BIT
DYNAMIC
RAM
ED0~ED15
DIGITAL
SIGNAL
PROCESSOR
ED0~
ED15
AR2
CN1
DATA BUS
IC28
SD16~SD31
4M BIT
DYNAMIC
RAM
SA2~SA10
IC29
SD0~SD15
4M BIT
DYNAMIC
RAM
SA2~SA10
IC30
SD0~SD9
1M BIT
MASK
ROM
SA0~SA16
ADDRESS BUS
CN2
CN5
IC25
RECEIVER
DRIVER
CN101
KB0~KB4
KF0~KF3,KS0~KS3


I CPR
SWITCHES & LEDS
CN1
+5IP
Q1~Q5
LED DRIVER
IC2,IC3
BUFFER
IC1
SW0~SW7
CM0~CM4
SEG0~SEG11
RST
DATA,
SCK
8 BIT MICROCOMPUTER
B AS
CN2
+15
+15A
IP5
Q1,2,D12
+15V
REGULATOR
-15
-15A
IP6
Q3,4,D13
-15V
REGULATOR
IC1B,
Q12,13
IC1A,
Q14,15
IC2~4
EQUALIZING
IC8B,9B
INTEGRATOR
HEADPHONE
AMPLIFIER
IC5~7
IC8A,9A
J JACK
JK9
LINE OUT L
JK8
LINE OUT R
JK7
AUX IN R
JK6
AUX IN L
CN1
JK1
Q2
JK4
MIDI OUT
Q1
JK5
MIDI THRU
IC1
PHOTO
COUPLER
JK3
MIDI IN
CN2
S1
COM.MAC
COM.PC1
COM.PC2
COM.MIDI
CN3
MAC
PC1
PC2
MIDI
COMPUTER
JK2
COMPUTER

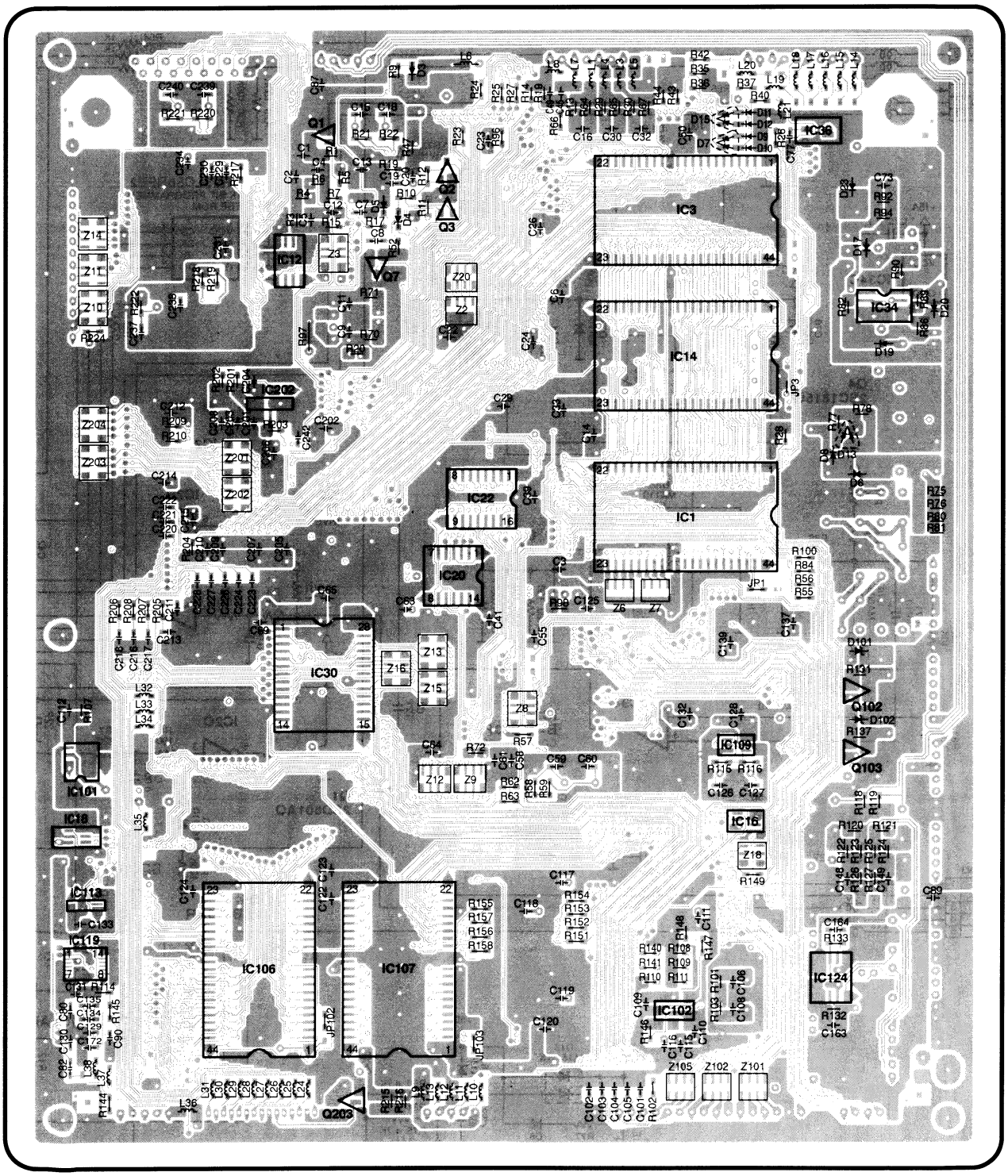

E ACP
T1
POWER TRANSFORMER
CN2
JK1
CN1
AC CORD
S1 POWER SWITCH
CN1
C JACK2
D3,5
D7,9
D1
CN3
IC1
JK3
MIC
CN2
CN1
D1 POWER INDICATOR
JK2
HEADPHONE2
JK1
HEADPHONE1
-VCC
+VCC
CN6
CN8
D ASUB
CN7
CN9
Q16,17
Q18,19
CN4
CN5
SP6 6.5cm,8Ω
SP2 20cm,6Ω
SP5 6.5cm,8Ω
SP1 20cm,6Ω
SP4 13cm × 6cm,8Ω
SP3 13cm × 6cm,8Ω
G PKB
SOFT
SOSU
SUS
CN1
K MKB1
L MKB2
IC2
DECODER
IC1
PROGRAMMED EEP ROM
SWITCHES & DIODES
CN4
CN3
CN5
CN6
IC3
DECODER
IC4
DECODER
SWITCHES & DIODES
CN1
CN2

■Printed Circuit Board and Schematic Diagram

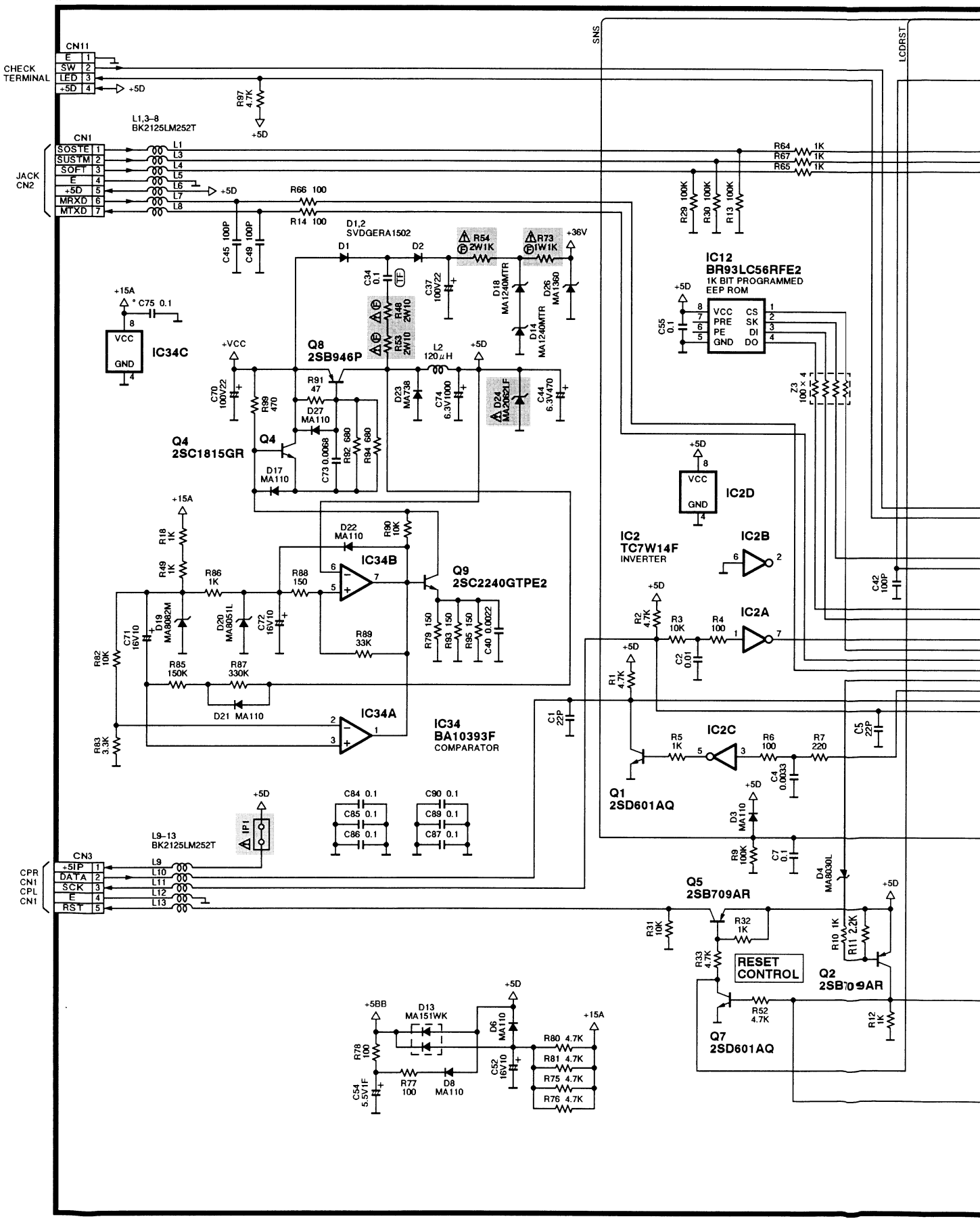
A MAIN P.C.B. (SIDE : A)

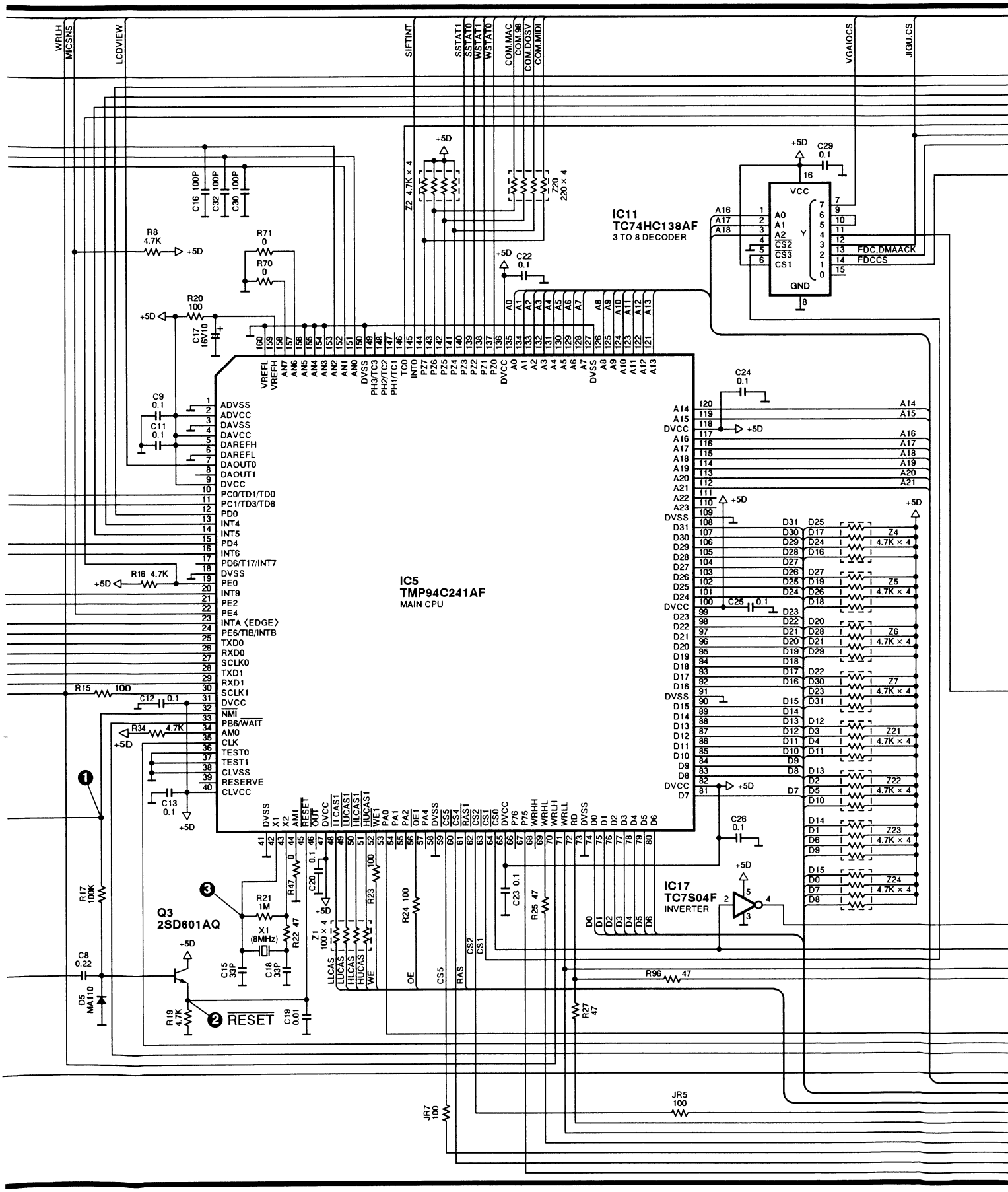


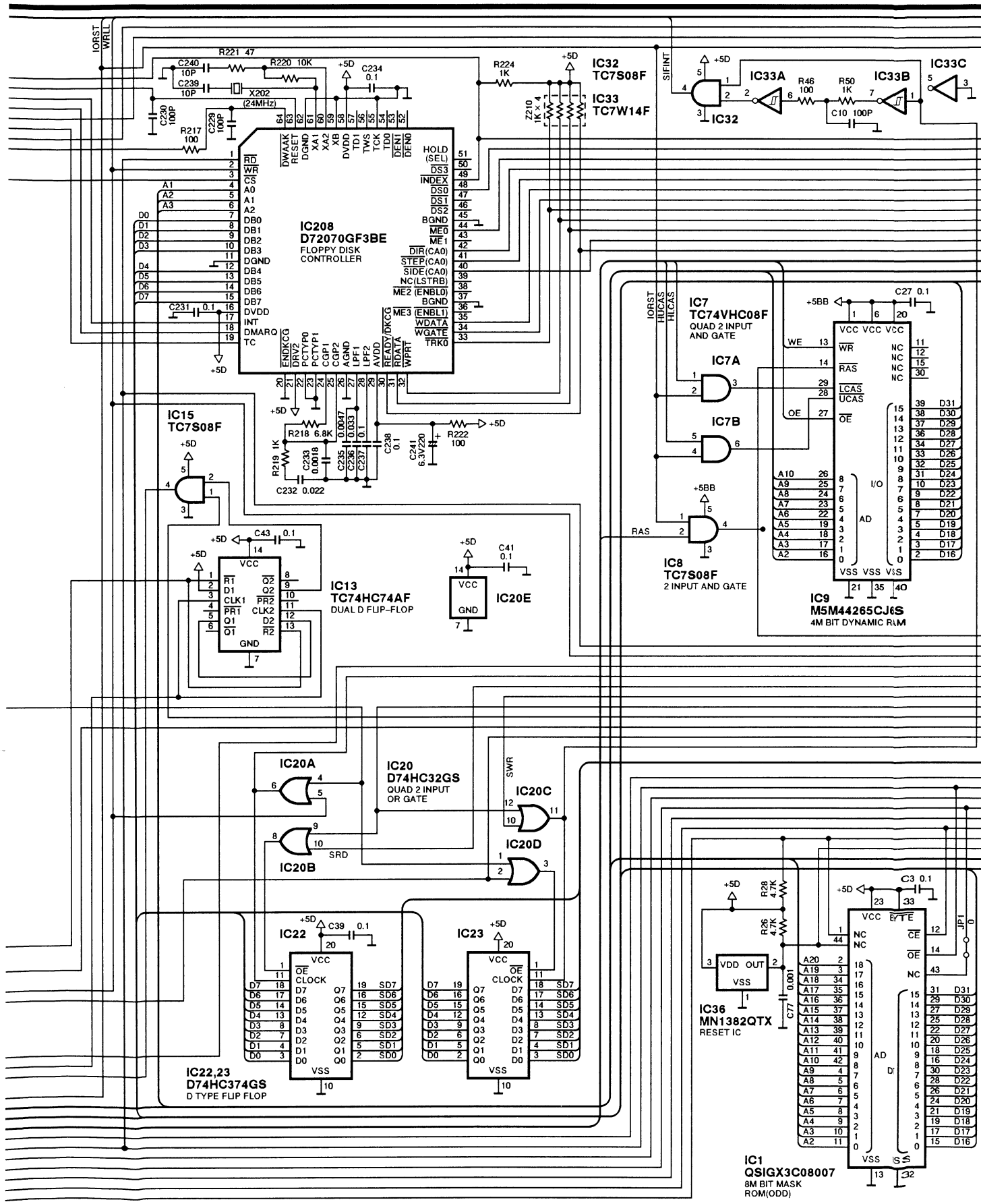
A MAIN P.C.B. (SIDE : B)

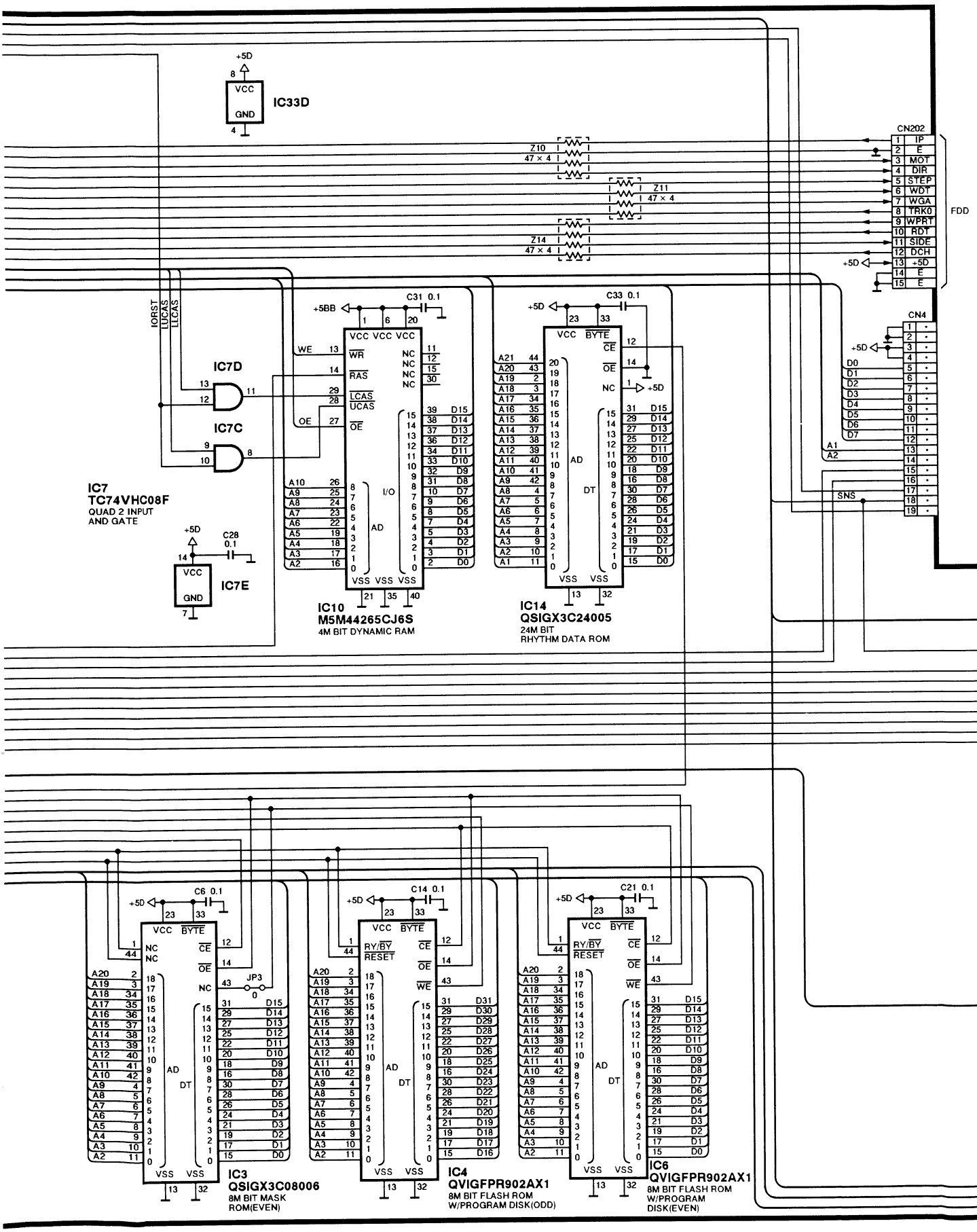


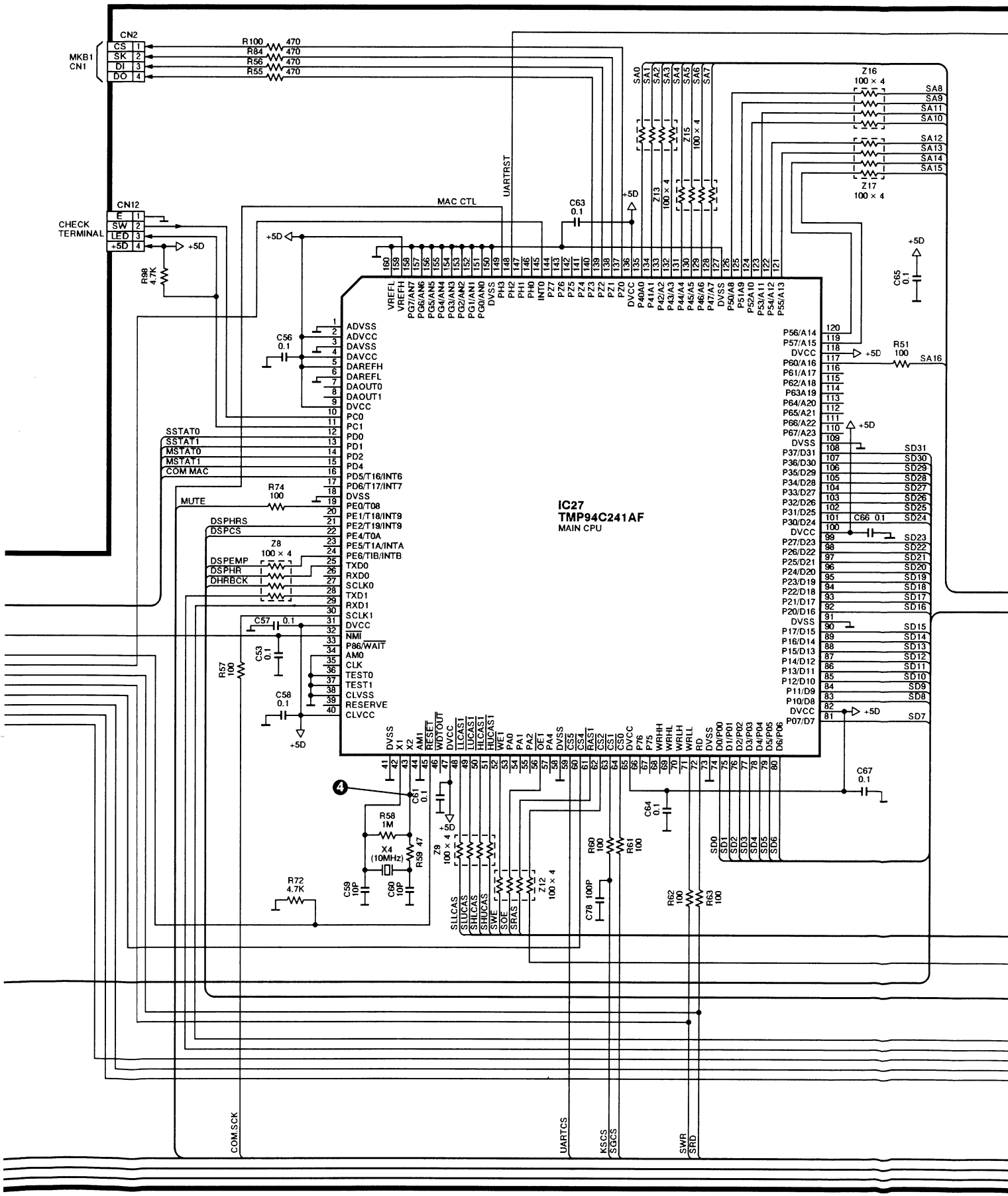
A MAIN CIRCUIT

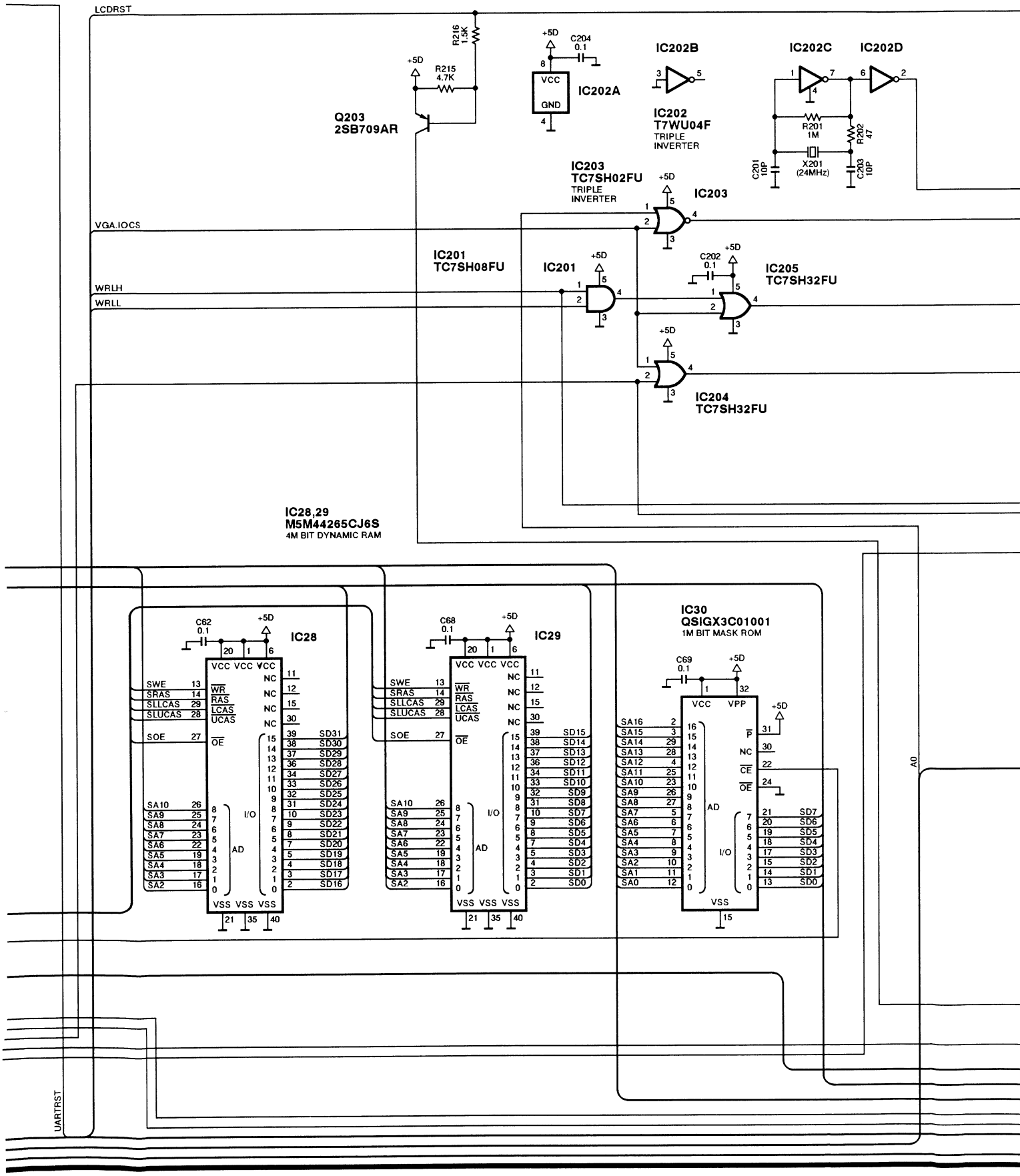


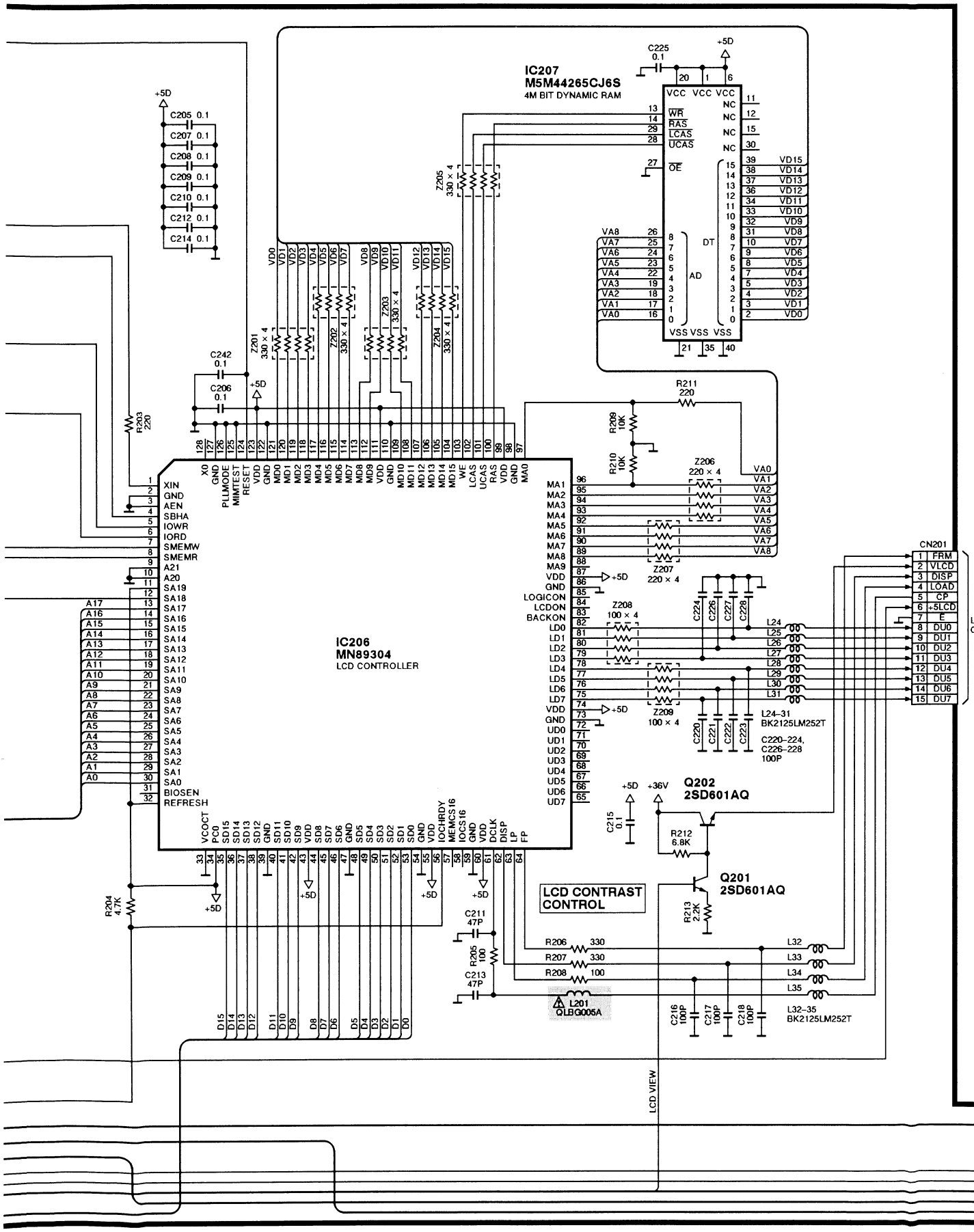

IC5
TMP94C241AF
MAIN CPU
IC11
TC74HC138AF
3 TO 8 DECODER
IC17
TC7S04F
INVERTER
Q3
2SD601AQ
RESET
WRLH
MICSNS
LCDVIEW
SIFTINT
SSTAT1
SSTAT0
WSTAT1
WSTAT0
COM.MAC
COM.98
COM.DOSV
COM.MIDI
VGAIOCS
JIGU.CS
FDC.DMAACK
FDCCS
+5D
GND
VCC

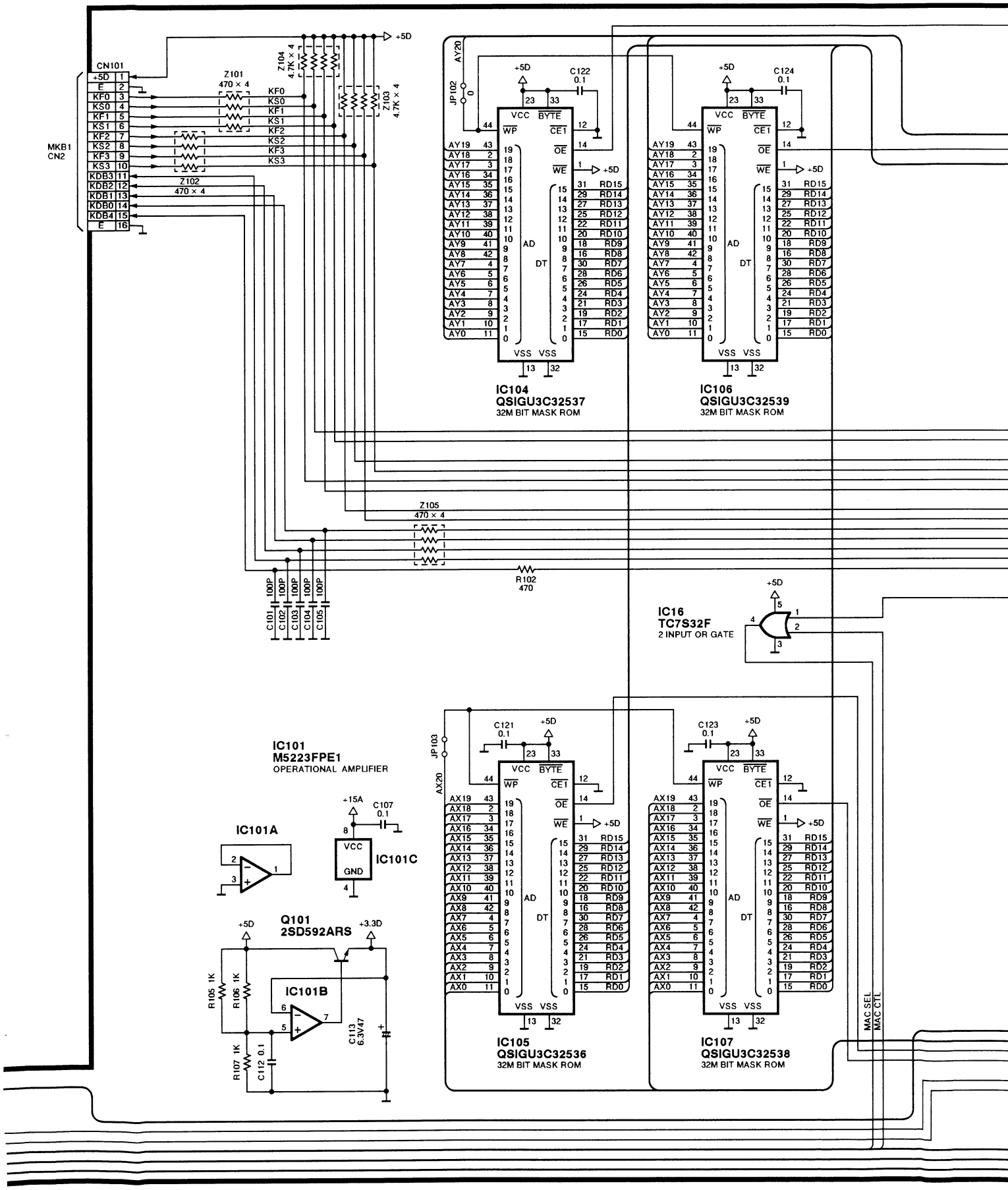

IC208
D72070GF3BE
FLOPPY DISK
CONTROLLER
IC32
TC7S08F
IC33
TC7W14F
IC33A
IC33B
IC33C
IC32
IC7
TC74VHC08F
QUAD 2 INPUT
AND GATE
IC7A
IC7B
IC8
TC7S08F
2 INPUT AND GATE
IC9
M5M44265CJ6S
4M BIT DYNAMIC RAM
IC15
TC7S08F
IC13
TC74HC74AF
DUAL D FLIP-FLOP
IC20E
IC20A
IC20B
IC20C
IC20D
IC20
D74HC32GS
QUAD 2 INPUT
OR GATE
IC22
IC23
IC22,23
D74HC374GS
D TYPE FLIP FLOP
IC36
MN1382QTX
RESET IC
IC1
QSIGX3C08007
8M BIT MASK
ROM(ODD)

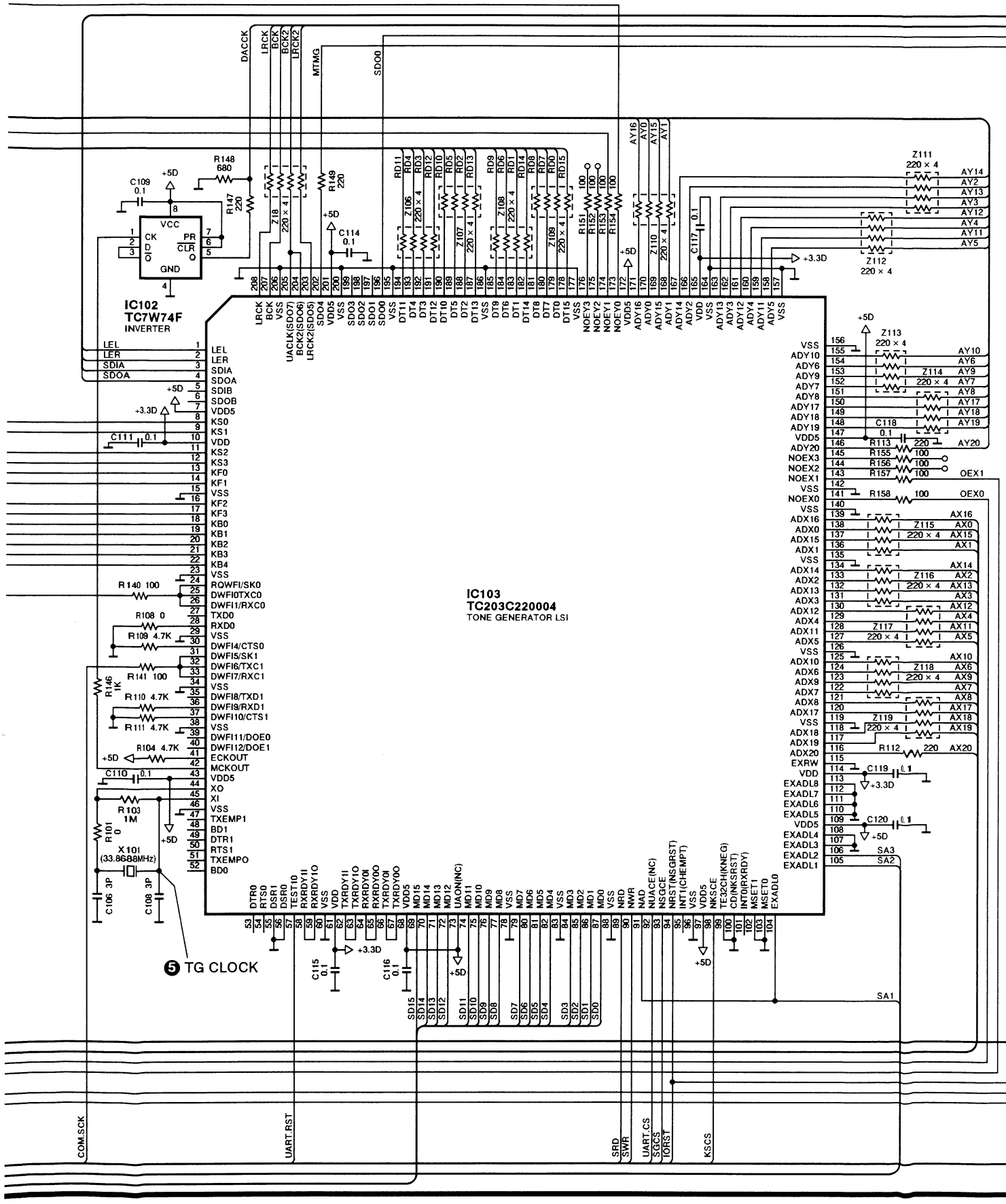

IC33D
+5D
VCC
GND
Z10 47 × 4
Z11 47 × 4
Z14 47 × 4
CN202
1 IP
2 E
3 MOT
4 DIR
5 STEP
6 WDT
7 WGA
8 TRK0
9 WPRT
10 RDT
11 SIDE
12 DCH
13 +5D
14 E
15 E
FDD
CN4
IORST
LCAS
UCAS
IC7D
IC7C
IC7
TC74VHC08F
QUAD 2 INPUT
AND GATE
C28 0.1
IC7E
+5BB
C31 0.1
IC10
M5M44265CJ6S
4M BIT DYNAMIC RAM
C33 0.1
IC14
QSIGX3C24005
24M BIT
RHYTHM DATA ROM
SNS
C6 0.1
IC3
QSIGX3C08006
8M BIT MASK
ROM(EVEN)
JP3
C14 0.1
IC4
QVIGFPR902AX1
8M BIT FLASH ROM
W/PROGRAM DISK(ODD)
C21 0.1
IC6
QVIGFPR902AX1
8M BIT FLASH ROM
W/PROGRAM
DISK(EVEN)

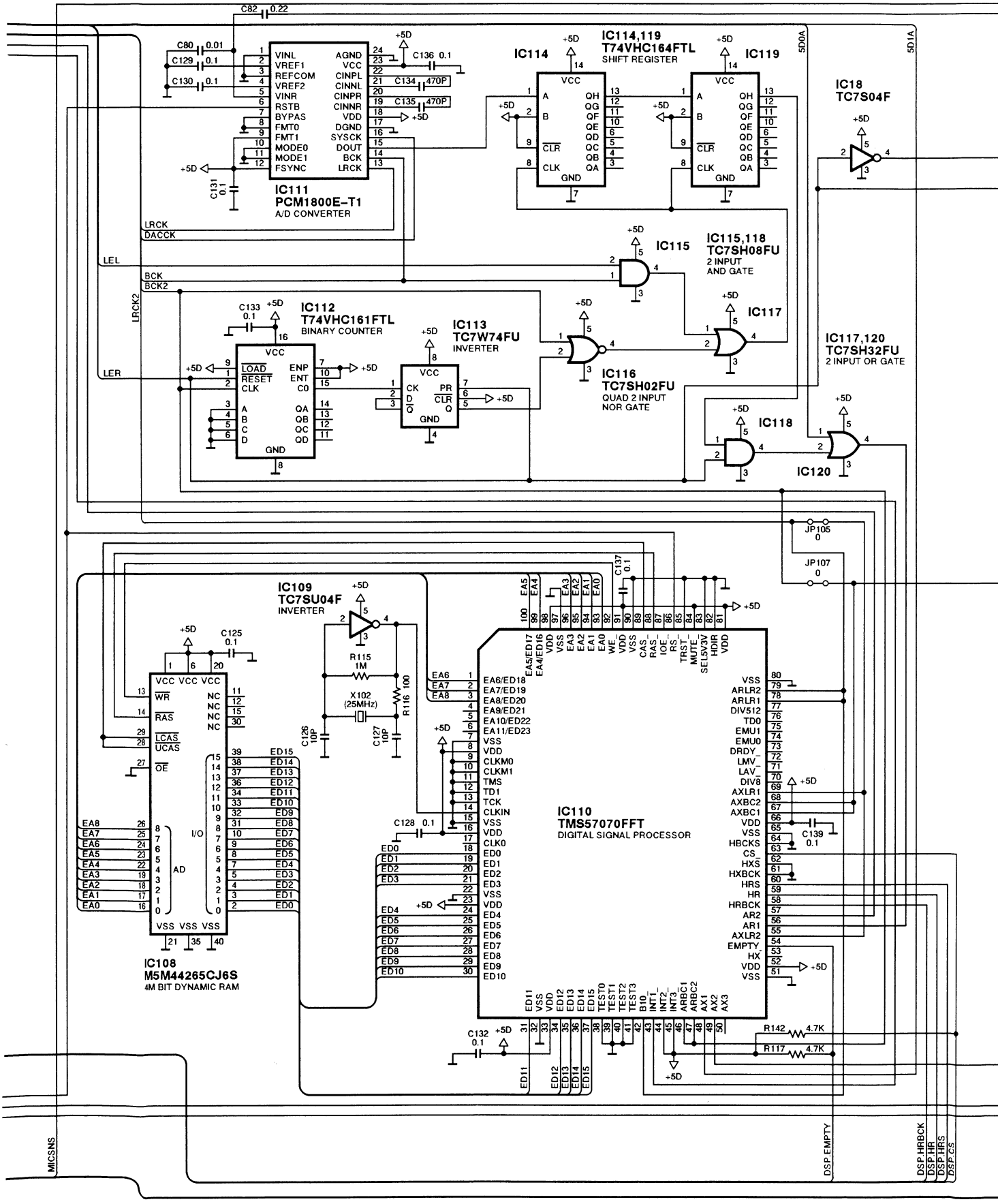

IC27
TMP94C241AF
MAIN CPU
CN2
MKB1
CN1
CS
SK
DI
DO
R100 470
R84 470
R56 470
R55 470
CN12
CHECK
TERMINAL
E
SW
LED
+5D
R98
4.7K
MAC CTL
UARTRST
C63
0.1
C56
0.1
C65
0.1
C66 0.1
C67
0.1
C64
0.1
C57 0.1
C53
0.1
C58
0.1
C61
0.1
R74
100
MUTE
R57
100
R51
100
SA16
Z8
100 × 4
Z9
100 × 4
Z12
100 × 4
Z13
100 × 4
Z15
100 × 4
Z16
100 × 4
Z17
100 × 4
DSPHRS
DSPCS
DSPEMP
DSPHR
DHRBCK
SSTAT0
SSTAT1
MSTAT0
MSTAT1
COM MAC
R58
1M
X4
(10MHz)
R59 47
C59
10P
C60
10P
R72
4.7K
R60
100
R61
100
R62
100
R63
100
C78 100P
COM.SCK
UARTCS
KSCS
SGCS
SWR
SRD

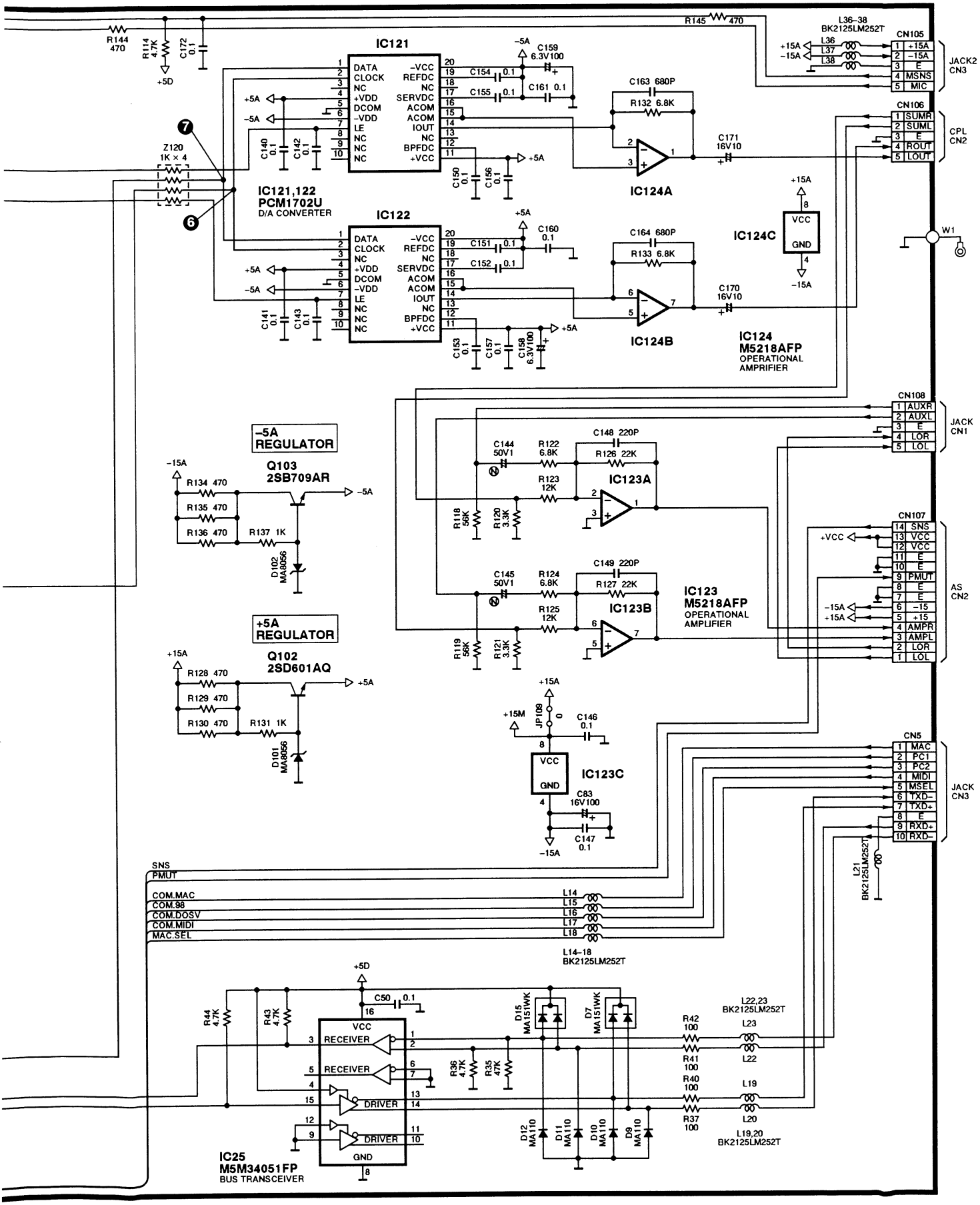

LCDRST
R216 1.5K
+5D
R215 4.7K
Q203 2SB709AR
+5D
C204 0.1
8
VCC
GND
4
IC202A
IC202B
3
5
IC202C
IC202D
1
7
6
2
4
IC202 T7WU04F TRIPLE INVERTER
R201 1M
R202 47
C201 10P
X201 (24MHz)
C203 10P
IC203 TC7SH02FU TRIPLE INVERTER
+5D
IC203
VGA.IOCS
IC201 TC7SH08FU
IC201
+5D
C202 0.1
IC205 TC7SH32FU
WRLH
WRLL
IC204 TC7SH32FU
IC28,29 M5M44265CJ6S 4M BIT DYNAMIC RAM
C62 0.1
+5D
IC28
C68 0.1
+5D
IC29
IC30 QSIGX3C01001 1M BIT MASK ROM
C69 0.1
+5D
VCC VCC VCC
NC
WR
RAS
LCAS
UCAS
OE
I/O
AD
VSS VSS VSS
SWE
SRAS
SLLCAS
SLUCAS
SOE
SA10
SA9
SA8
SA7
SA6
SA5
SA4
SA3
SA2
SD31
SD30
SD29
SD28
SD27
SD26
SD25
SD24
SD23
SD22
SD21
SD20
SD19
SD18
SD17
SD16
SD15
SD14
SD13
SD12
SD11
SD10
SD9
SD8
SD7
SD6
SD5
SD4
SD3
SD2
SD1
SD0
VCC
VPP
P
CE
SA16
SA15
SA14
SA13
SA12
SA11
SA1
SA0
A0
UARTRST


IC207
M5M44265CJ6S
4M BIT DYNAMIC RAM
IC206
MN89304
LCD CONTROLLER
LCD CONTRAST CONTROL
Q202
2SD601AQ
Q201
2SD601AQ
L201
QLBG005A
L24–31
BK2125LM252T
C220–224,
C226–228
100P
L32–35
BK2125LM252T
CN201
LCD
CN1
LCD VIEW
+5D
+36V


CN101
MKB1
CN2
Z101
470 × 4
Z102
470 × 4
Z103
4.7K × 4
Z104
4.7K × 4
Z105
470 × 4
R102
470
C101 100P
C102 100P
C103 100P
C104 100P
C105 100P
JP102
JP103
AY20
AX20
C122 0.1
C124 0.1
C121 0.1
C123 0.1
IC104
QSIGU3C32537
32M BIT MASK ROM
IC106
QSIGU3C32539
32M BIT MASK ROM
IC105
QSIGU3C32536
32M BIT MASK ROM
IC107
QSIGU3C32538
32M BIT MASK ROM
IC16
TC7S32F
2 INPUT OR GATE
IC101
M5223FPE1
OPERATIONAL AMPLIFIER
IC101A
IC101B
IC101C
C107 0.1
C112 0.1
C113 6.3V47
R105 1K
R106 1K
R107 1K
Q101
2SD592ARS
+5D
+15A
+3.3D
MAC SEL
MAC CTL


IC102
TC7W74F
INVERTER
IC103
TC203C220004
TONE GENERATOR LSI
X101
(33.8688MHz)
TG CLOCK
COM.SCK
UART.RST
SRD
SWR
UART.CS
SGCS
IORST
KSCS


IC111
PCM1800E-T1
A/D CONVERTER
IC114,119
T74VHC164FTL
SHIFT REGISTER
IC114
IC119
IC18
TC7S04F
IC115
IC115,118
TC7SH08FU
2 INPUT
AND GATE
IC117
IC117,120
TC7SH32FU
2 INPUT OR GATE
IC112
T74VHC161FTL
BINARY COUNTER
IC113
TC7W74FU
INVERTER
IC116
TC7SH02FU
QUAD 2 INPUT
NOR GATE
IC118
IC120
IC109
TC7SU04F
INVERTER
IC110
TMS57070FFT
DIGITAL SIGNAL PROCESSOR
IC108
M5M44265CJ6S
4M BIT DYNAMIC RAM
LRCK
DACCK
BCK
BCK2
LRCK2
LEL
LER
MICSNS
DSP.EMPTY
DSP.HRBCK
DSP.HR
DSP.HRS
DSP.CS
JP105
JP107
X102
(25MHz)
R115
1M
R116
100
R142
4.7K
R117
4.7K

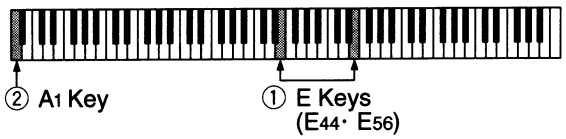

IC121
IC121,122
PCM1702U
D/A CONVERTER
IC122
IC124A
IC124B
IC124C
IC124
M5218AFP
OPERATIONAL
AMPRIFIER
IC123A
IC123B
IC123C
IC123
M5218AFP
OPERATIONAL
AMPLIFIER
-5A
REGULATOR
Q103
2SB709AR
+5A
REGULATOR
Q102
2SD601AQ
IC25
M5M34051FP
BUS TRANSCEIVER
CN105
CN106
CN108
CN107
CN5
JACK2
CN3
CPL
CN2
JACK
CN1
AS
CN2
JACK
CN3
W1
SNS
PMUT
COM.MAC
COM.98
COM.DOSV
COM.MIDI
MAC.SEL
L14–18
BK2125LM252T
L36–38
BK2125LM252T
L22,23
BK2125LM252T
L19,20
BK2125LM252T
L21
BK2125LM252T

■ Measuring Condition of MAIN P.C.B.

Check Point ❸~❼

Set to the self-diagnostic mode followings.

- While pressing two<None> E keys (①) simultaneously, turn on the power switch.
- SOUND ..... SYNTH
- Main Volume ..... MAX
- Keyboard ..... A_1 (②)

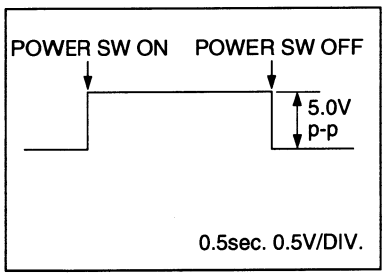


Check Point ❶, ❷

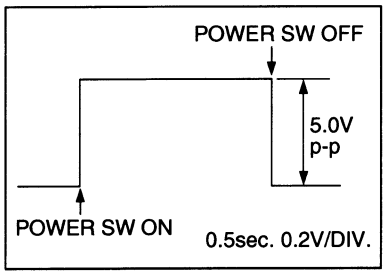
Set the initial setting mode (Refer to page I-5)

- SOUND ..... SYNTH
- Main Volume ..... MAX

❶ SNS

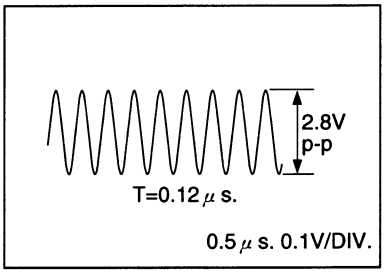


❷ $\overline{\text{RESET}}$

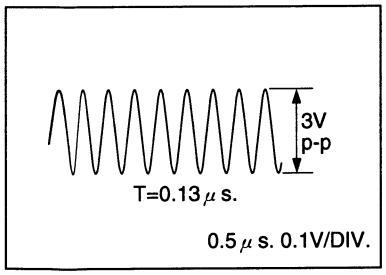


● Power SW ..... ON → OFF

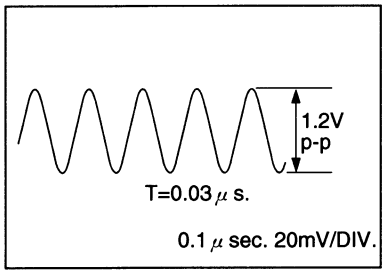
❸



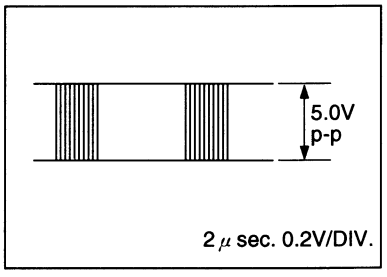
❹



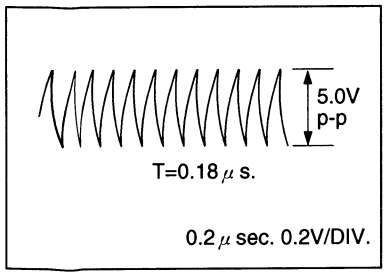
❺ TG CLOCK



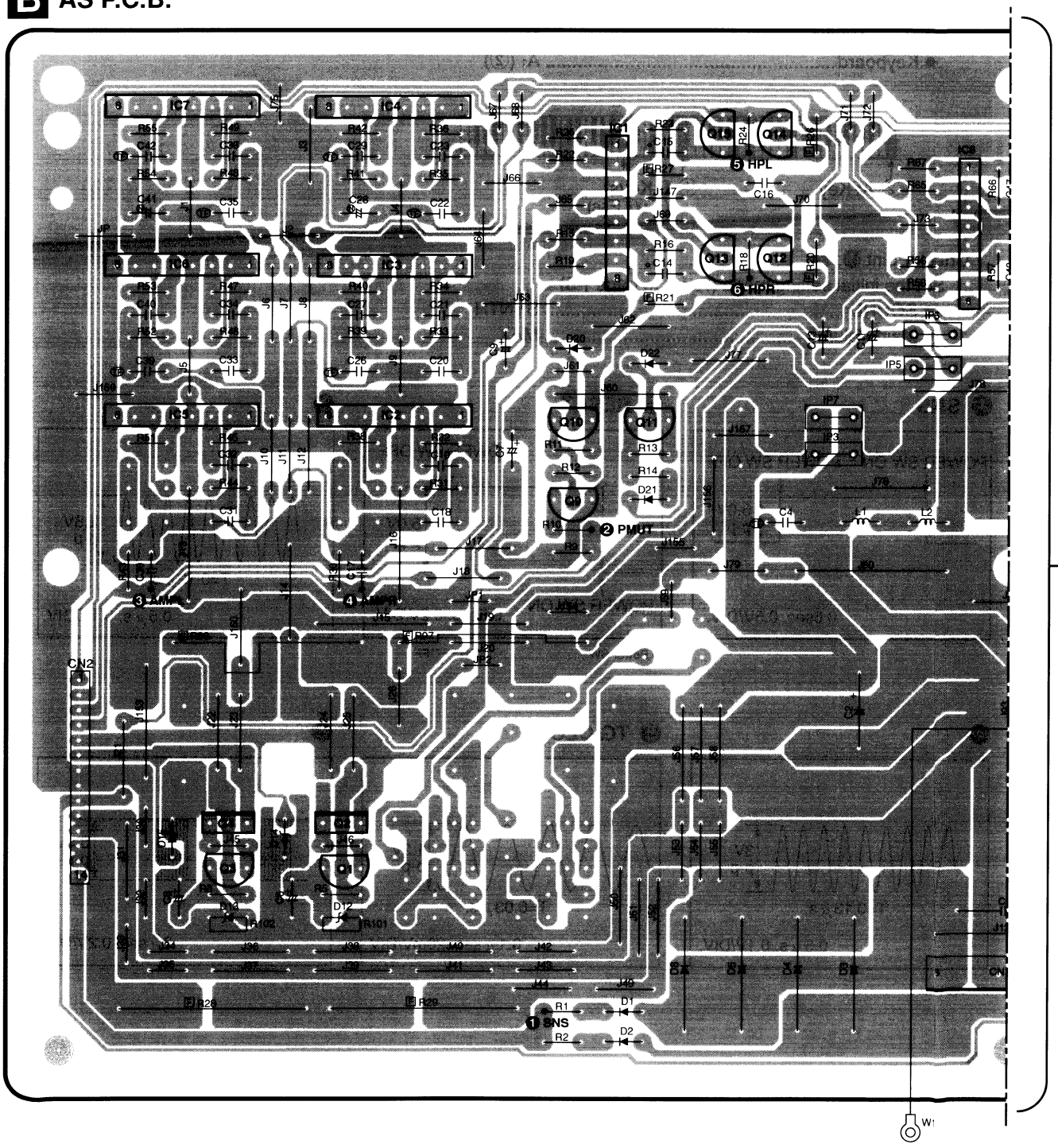
❻

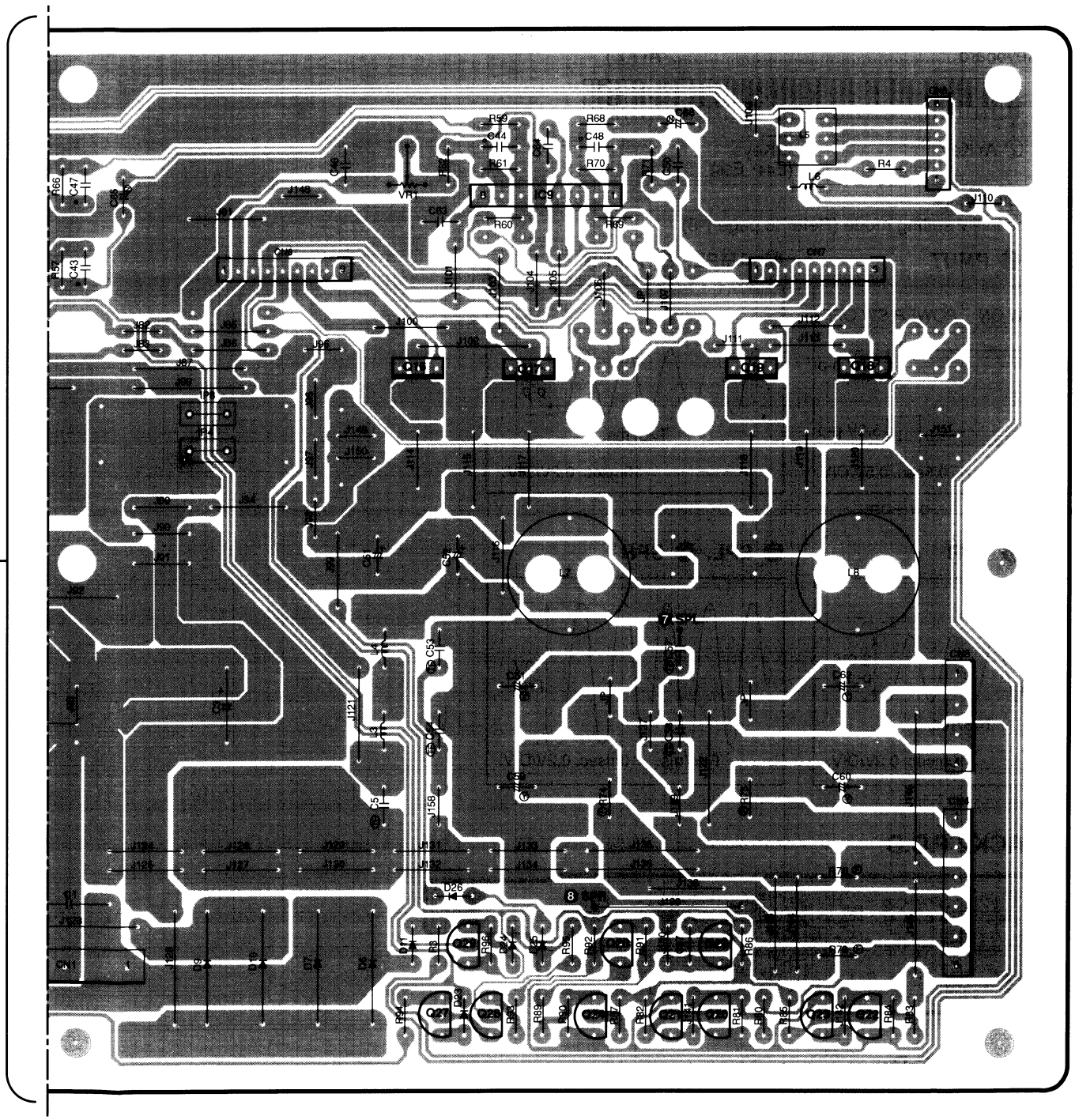


❼



B AS P.C.B.


IC7
IC4
IC6
IC3
IC5
IC2
IC1
Q18
Q11
Q13
Q12
Q14
5 HPL
6 HPR
2 PMUT
1 SNS
3
4
CN2
W1

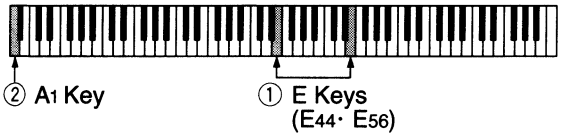


■ Measuring Condition of AS P.C.B.

Check Point ❸~❽

Set to the self-diagnostic mode followings.

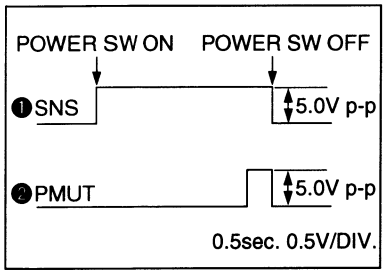
- While pressing two E keys (①) simultaneously, turn on the power switch.
- SOUND ..... SYNTH
- Main Volume ..... MAX
- Keyboard ..... A_1 (②)



Check Point ❶, ❷

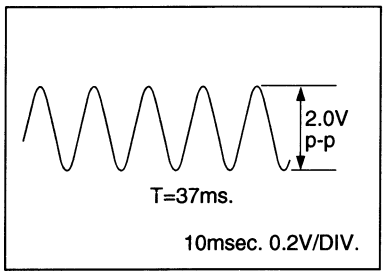
Set the initial setting mode (Refer to page I-5)

❶ SNS, ❷ PMUT

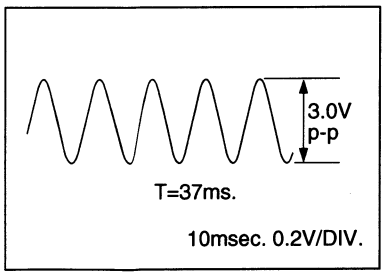


• Power SW..... ON → OFF

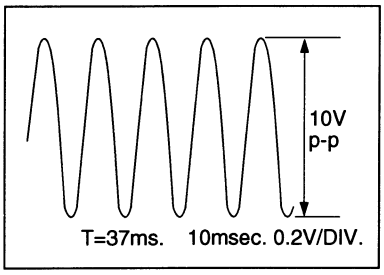
❸ AMPL, ❹ AMPR



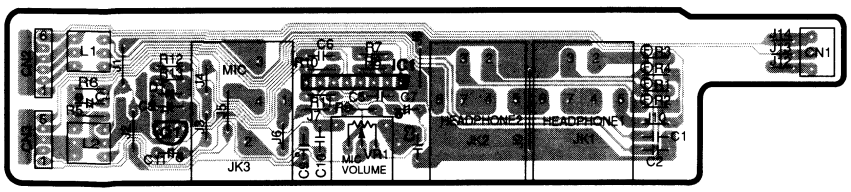
❺ HPL, ❻ HPR



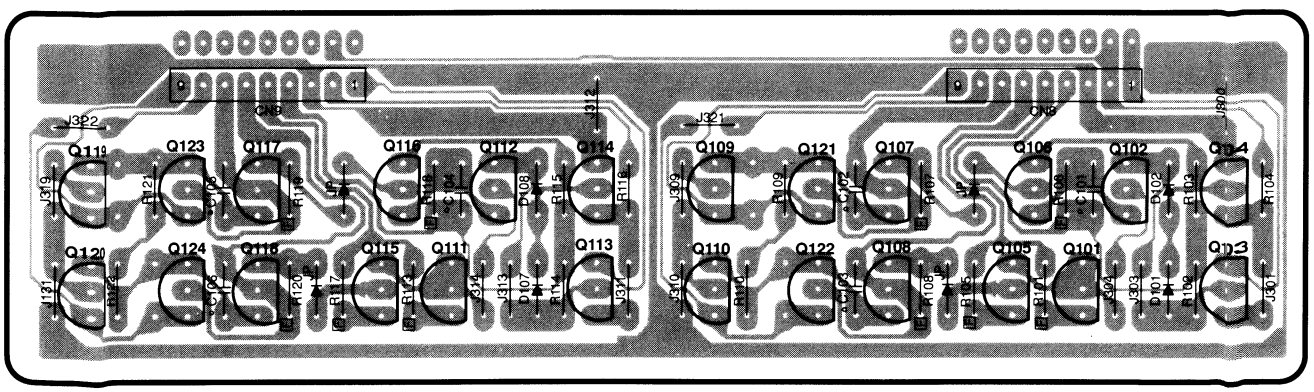
❼ SPL, ❽ SPR



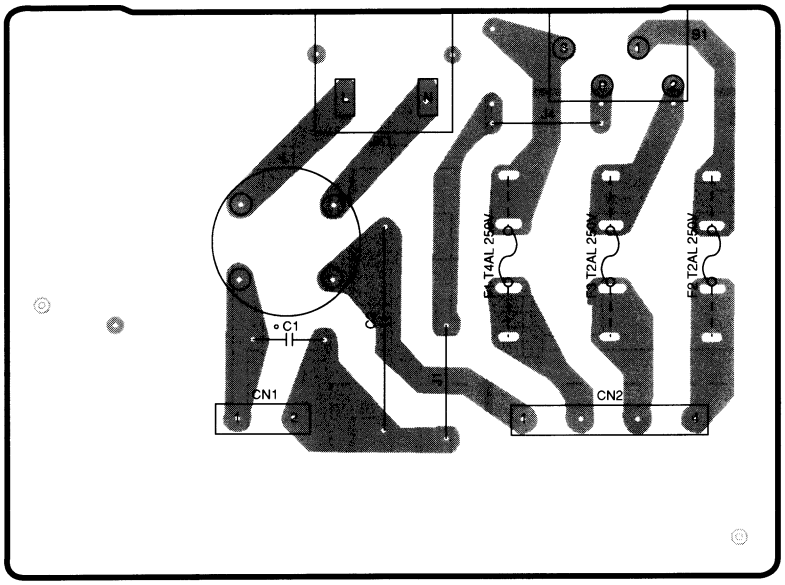
C JACK2 P.C.B.



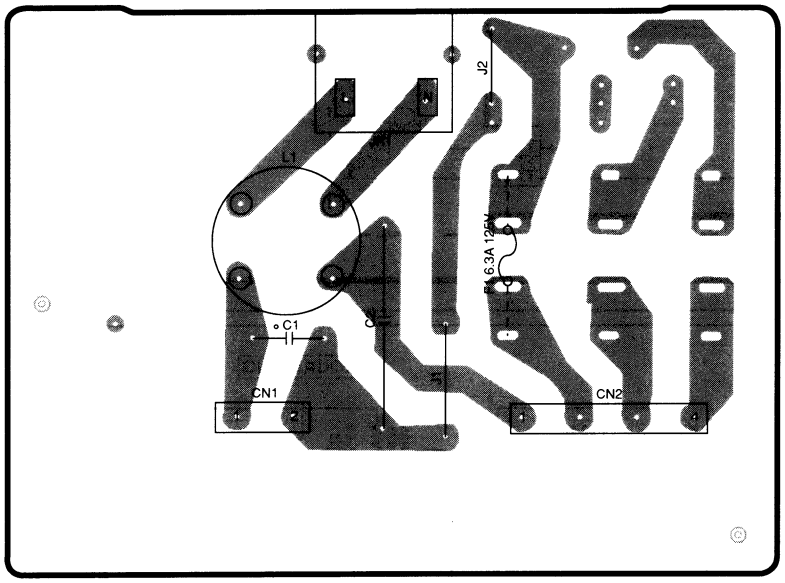
D ASUB P.C.B.



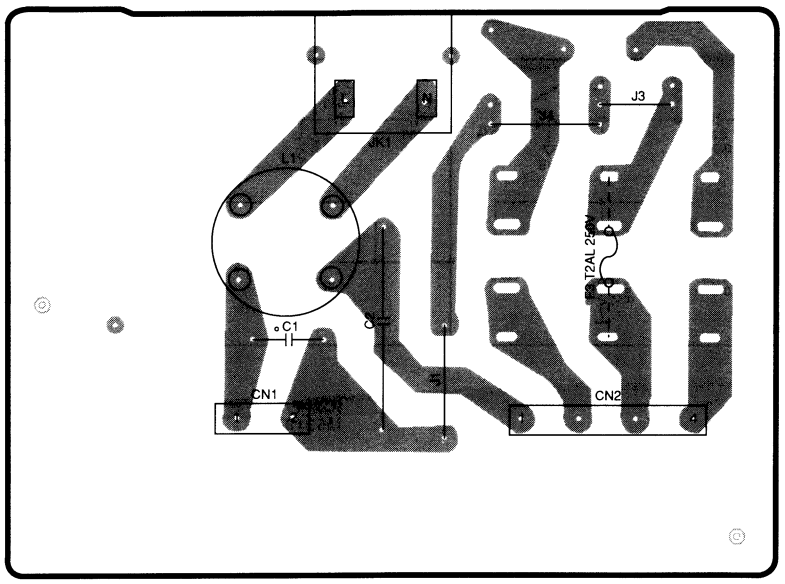
E ACP P.C.B. (X XS XD XT)

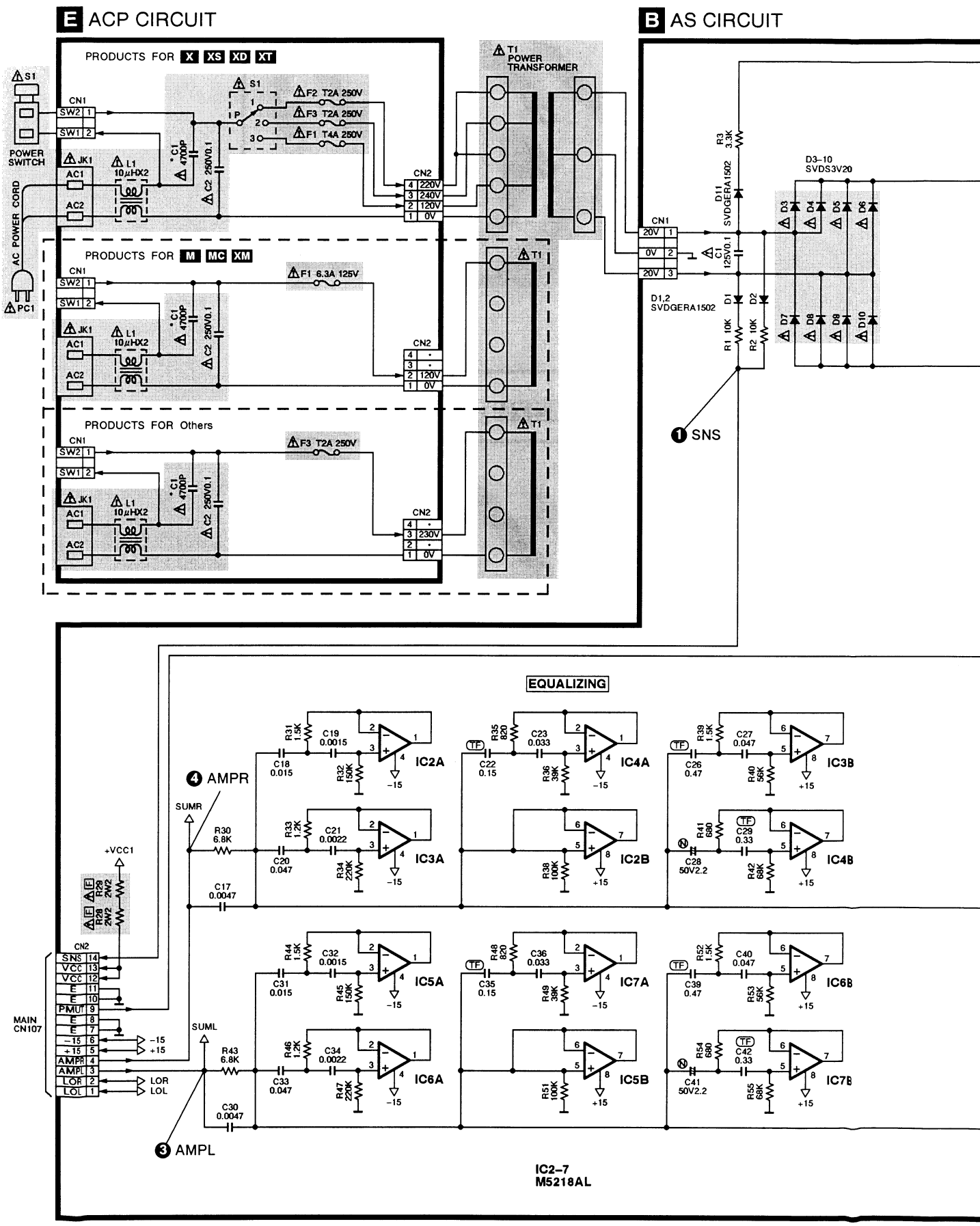


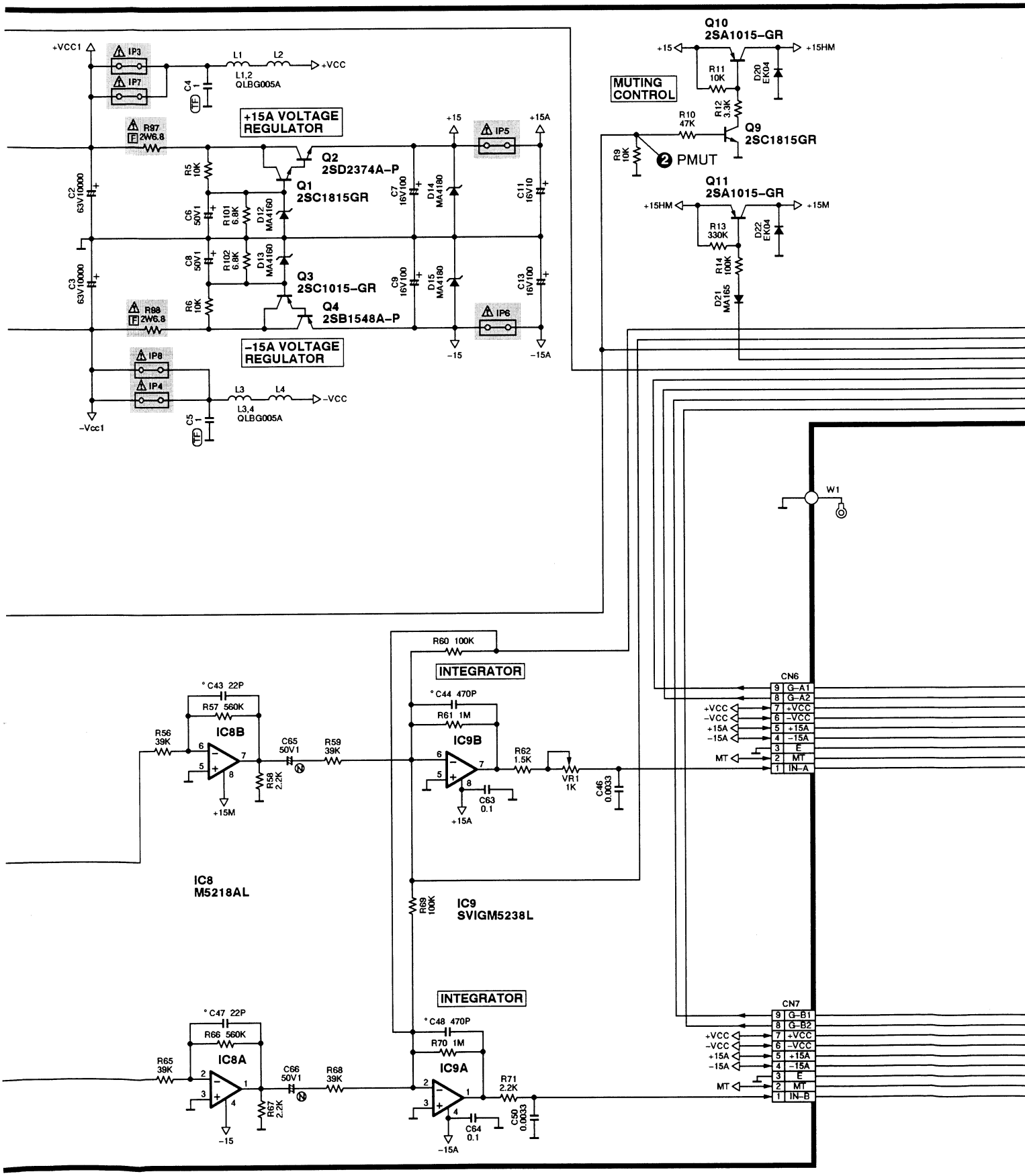
E ACP P.C.B. (M MC XM)

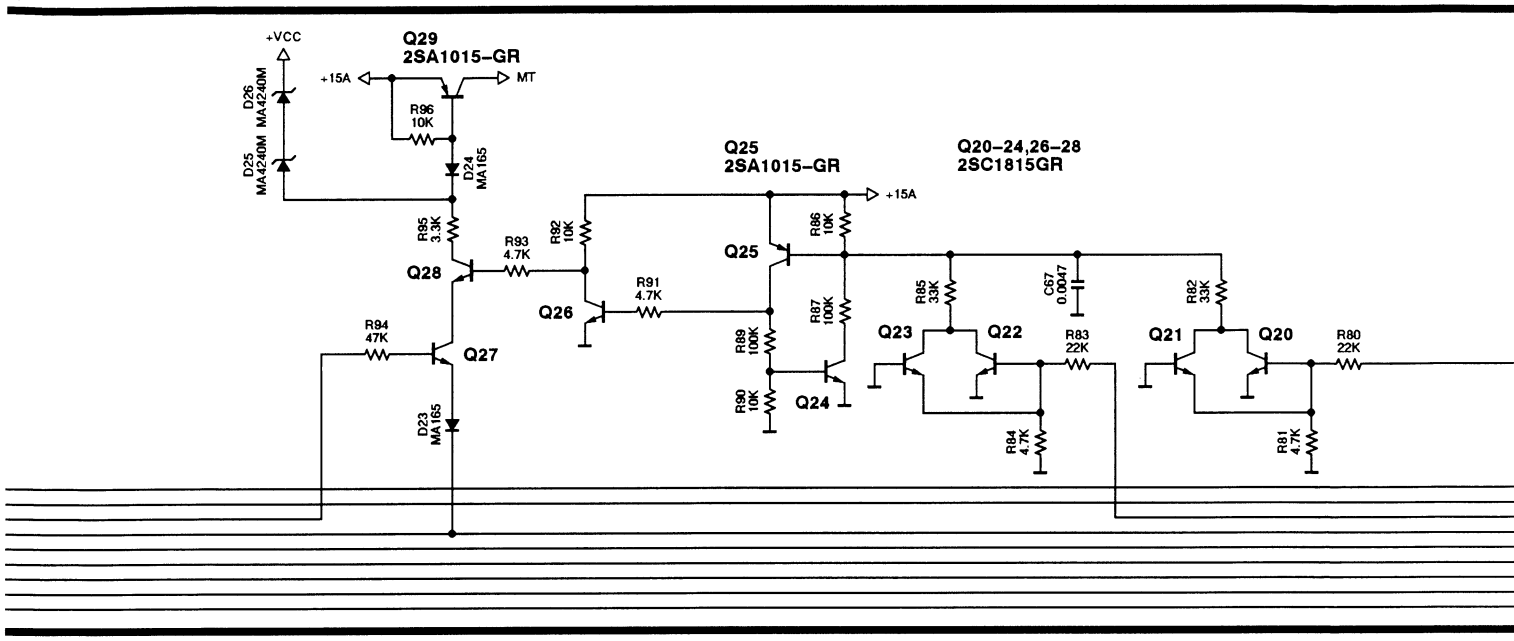


E ACP P.C.B. (Others)

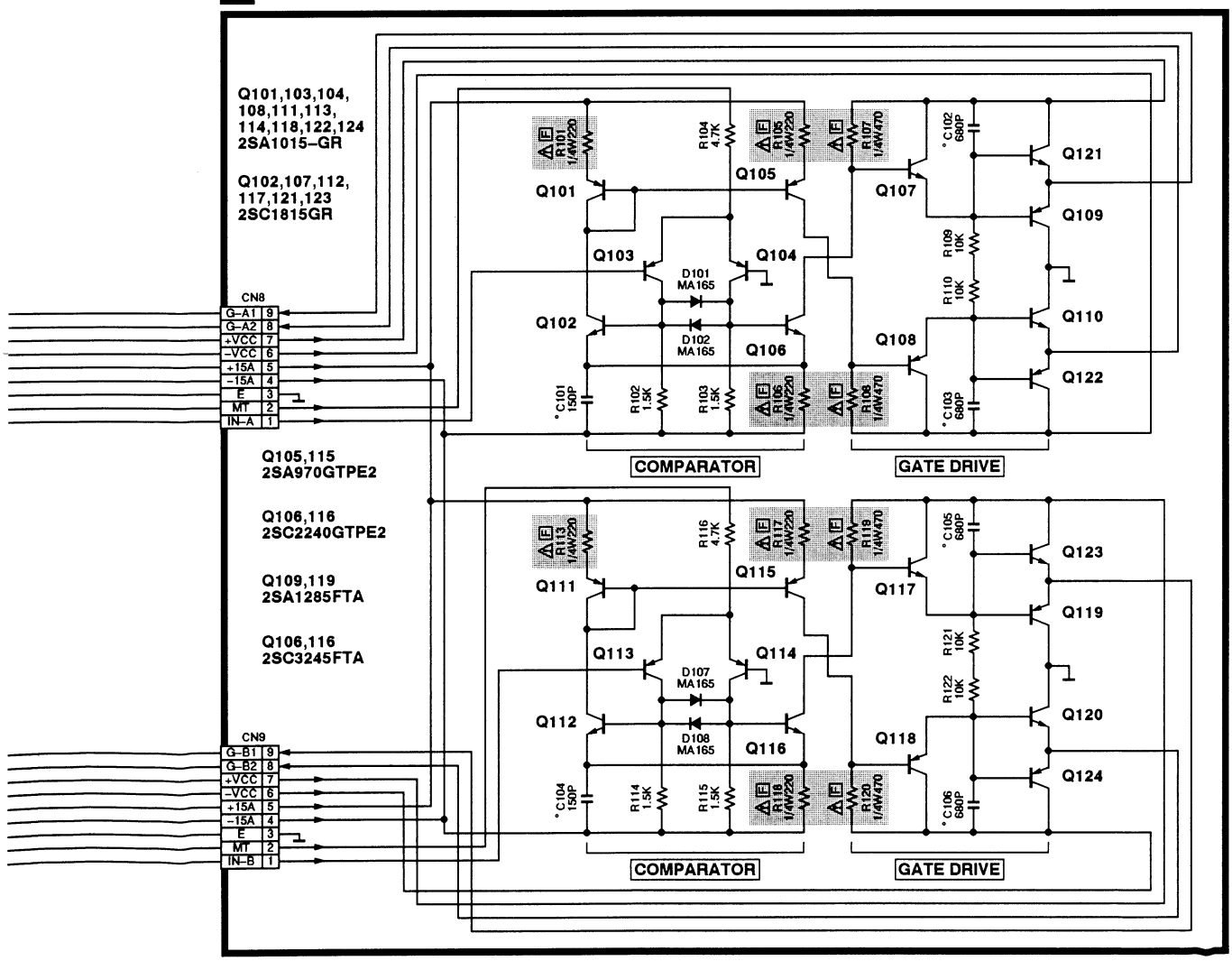


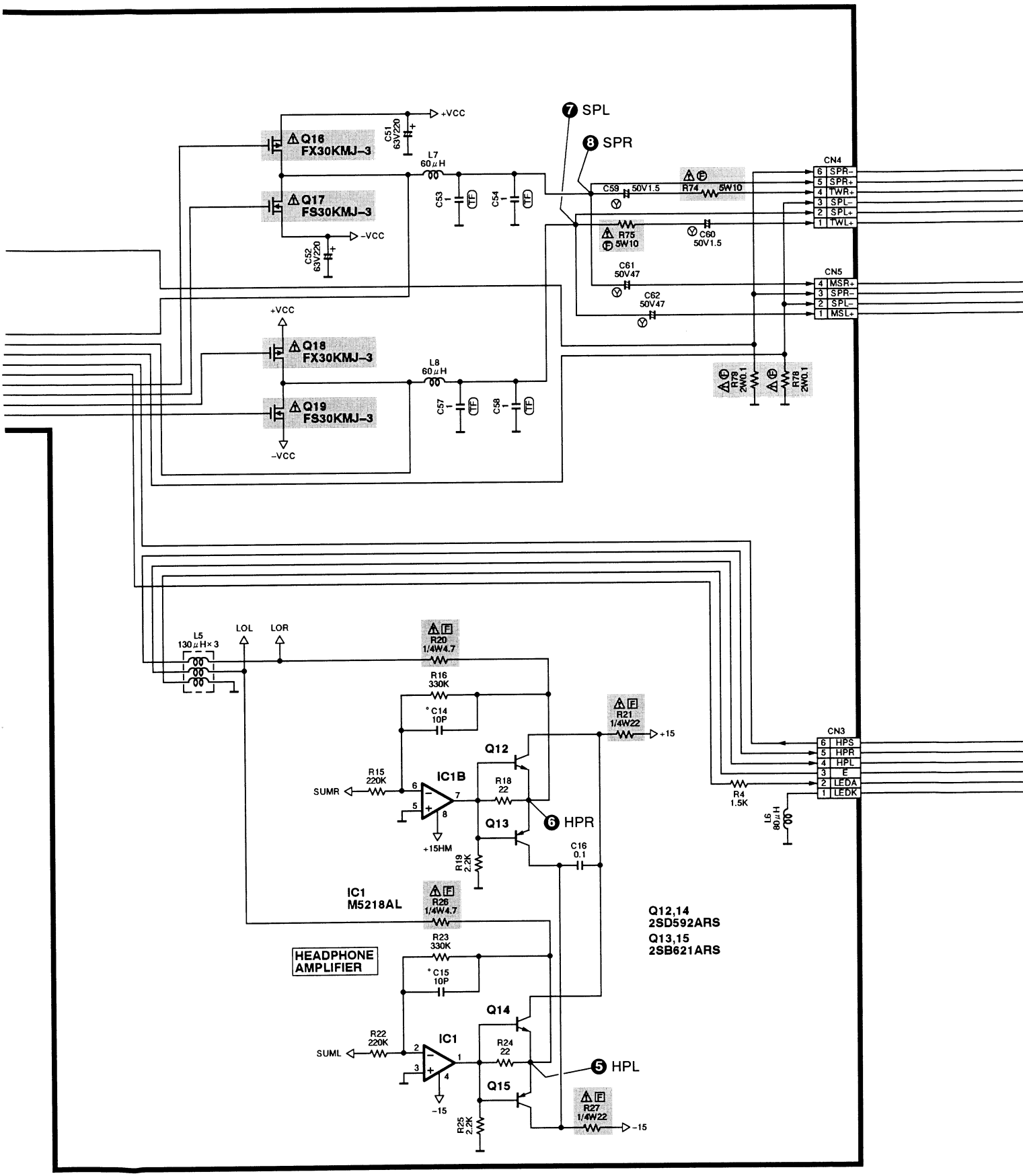

E ACP CIRCUIT
B AS CIRCUIT
PRODUCTS FOR X XS XD XT
PRODUCTS FOR M MC XM
PRODUCTS FOR Others
POWER SWITCH
AC POWER CORD
PC1
S1
JK1
L1 10μHX2
C1 4700P
C2 250V0.1
F1 T4A 250V
F2 T2A 250V
F3 T2A 250V
F1 6.3A 125V
T1 POWER TRANSFORMER
CN1
CN2
220V
240V
120V
0V
230V
D1,2 SVDGERA1502
D3-10 SVDS3V20
D11 SVDGERA1502
R1 10K
R2 10K
R3 3.3K
SNS
EQUALIZING
AMPR
AMPL
SUMR
SUML
+VCC1
MAIN CN107
IC2A
IC3A
IC4A
IC2B
IC3B
IC4B
IC5A
IC6A
IC7A
IC5B
IC6B
IC7B
IC2-7
M5218AL

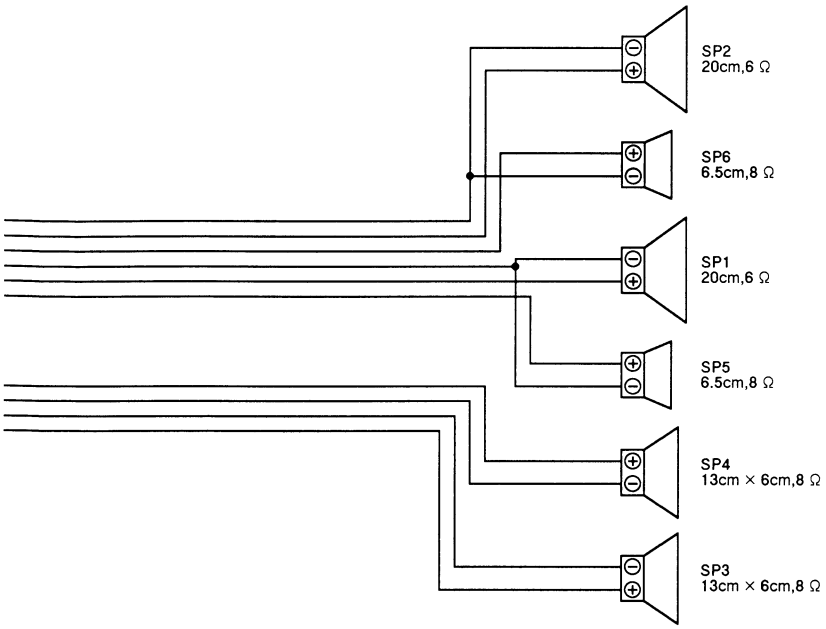

+VCC1
IP3
IP7
L1
L2
+VCC
L1,2
QLBG005A
C4
1
TF
+15A VOLTAGE REGULATOR
R97
F 2W6.8
Q2
2SD2374A-P
Q1
2SC1815GR
R5
10K
C2
63V10000
C6
50V1
R101
6.8K
D12
MA4160
C8
50V1
R102
6.8K
D13
MA4160
Q3
2SC1015-GR
C3
63V10000
R6
10K
R98
F 2W6.8
Q4
2SB1548A-P
-15A VOLTAGE REGULATOR
IP8
IP4
L3
L4
-VCC
L3,4
QLBG005A
C5
1
TF
-Vcc1
+15
+15A
IP5
IP6
C7
16V100
D14
MA4180
C9
16V100
D15
MA4180
C11
16V10
C13
16V100
-15
-15A
Q10
2SA1015-GR
+15
+15HM
MUTING CONTROL
R11
10K
D20
EK04
R12
3.3K
R10
47K
Q9
2SC1815GR
R9
10K
2 PMUT
Q11
2SA1015-GR
+15HM
+15M
R13
330K
D22
EK04
R14
100K
D21
MA165
W1
R60 100K
INTEGRATOR
°C43 22P
R57 560K
R56
39K
IC8B
C65
50V1
R59
39K
R58
2.2K
+15M
°C44 470P
R61 1M
IC9B
R62
1.5K
VR1
1K
C46
0.0033
C63
0.1
+15A
IC8
M5218AL
R69
100K
IC9
SVIGM5238L
CN6
9 G-A1
8 G-A2
7 +VCC
6 -VCC
5 +15A
4 -15A
3 E
2 MT
1 IN-A
+VCC
-VCC
+15A
-15A
MT
INTEGRATOR
°C47 22P
R66 560K
R65
39K
IC8A
C66
50V1
R68
39K
R67
2.2K
-15
°C48 470P
R70 1M
IC9A
R71
2.2K
C50
0.0033
C64
0.1
-15A
CN7
9 G-B1
8 G-B2
7 +VCC
6 -VCC
5 +15A
4 -15A
3 E
2 MT
1 IN-B
+VCC
-VCC
+15A
-15A
MT



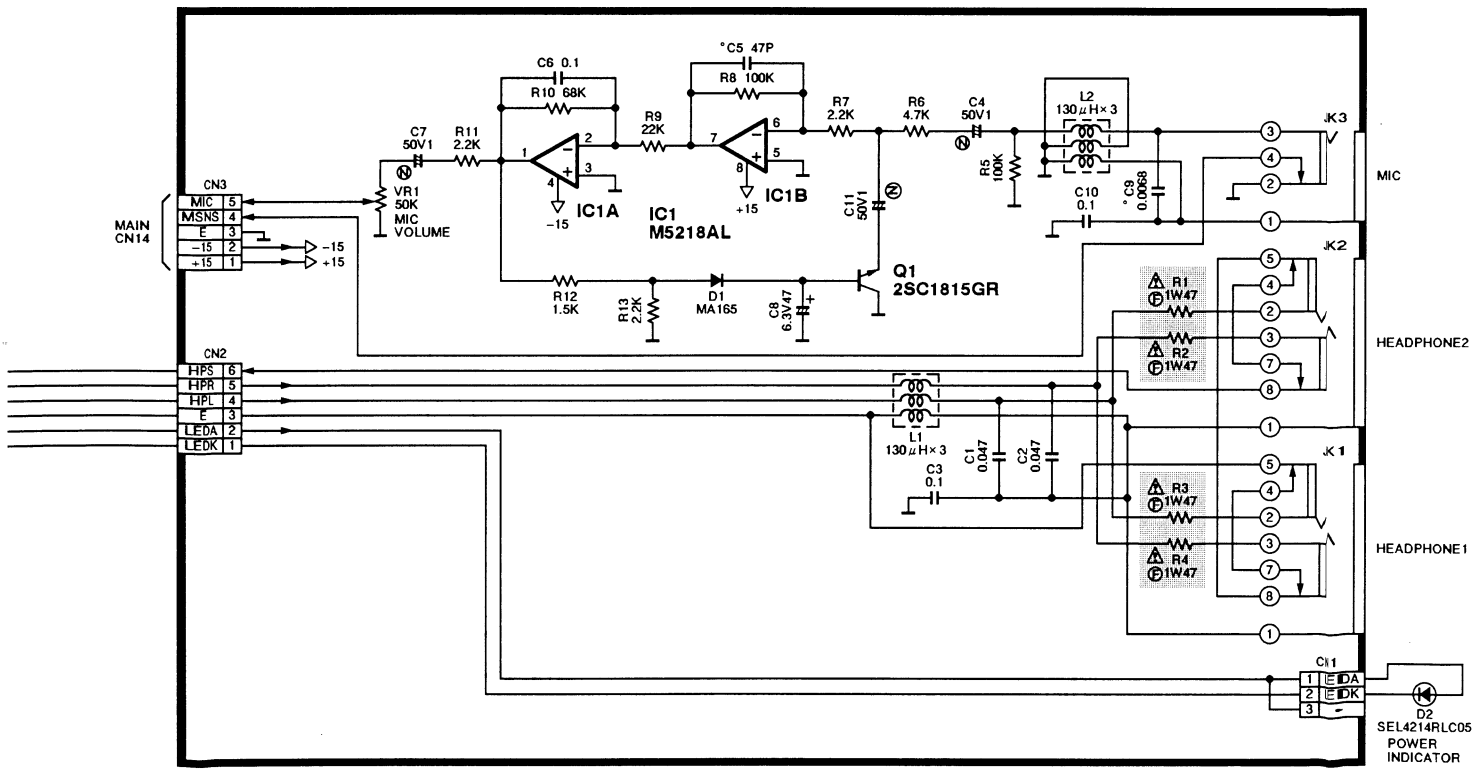
D ASUB CIRCUIT



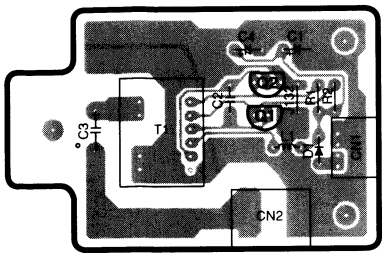

+VCC
C51 63V220
Q16 FX30KMJ-3
L7 60μH
C53
C54
7 SPL
8 SPR
C59 50V1.5
R74 5W10
CN4
6 SPR-
5 SPR+
4 TWR+
3 SPL-
2 SPL+
1 TWL+
Q17 FS30KMJ-3
-VCC
C52 63V220
R75 5W10
C60 50V1.5
C61 50V47
C62 50V47
CN5
4 MSR+
3 SPR-
2 SPL-
1 MSL+
+VCC
Q18 FX30KMJ-3
L8 60μH
C57
C58
R79 2W0.1
R78 2W0.1
Q19 FS30KMJ-3
-VCC
L5 130μH×3
LOL
LOR
R20 1/4W4.7
R16 330K
C14 10P
R21 1/4W22
+15
Q12
R15 220K
SUMR
IC1B
R18 22
CN3
6 HPS
5 HPR
4 HPL
3 E
2 LEDA
1 LEDK
R4 1.5K
L6 80μH
6 HPR
Q13
C16 0.1
+15HM
R19 2.2K
IC1 M5218AL
R26 1/4W4.7
Q12,14 2SD592ARS
Q13,15 2SB621ARS
R23 330K
HEADPHONE AMPLIFIER
C15 10P
Q14
R22 220K
SUML
IC1
R24 22
5 HPL
Q15
-15
R27 1/4W22
R25 2.2K



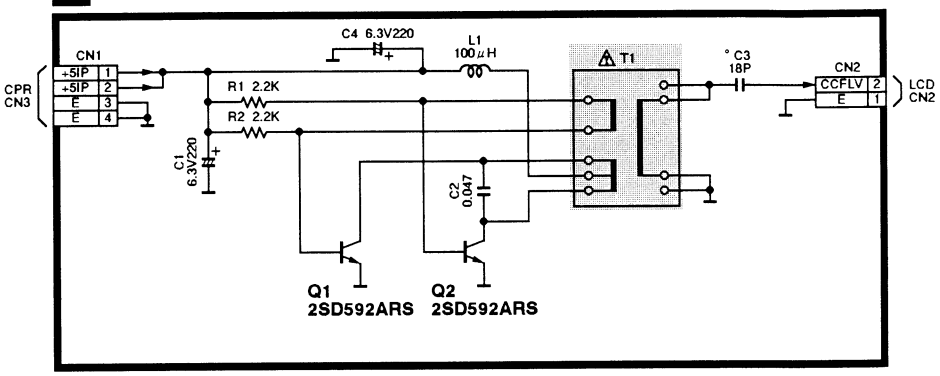
C JACK2 CIRCUIT



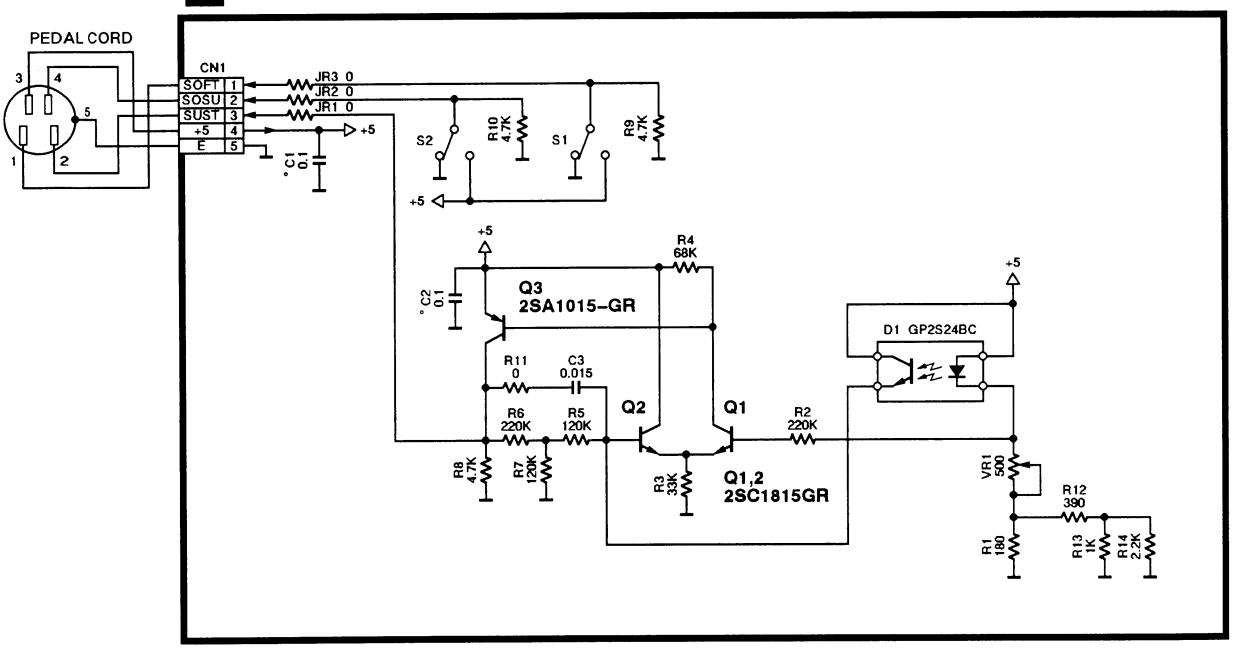
F INVR P.C.B.



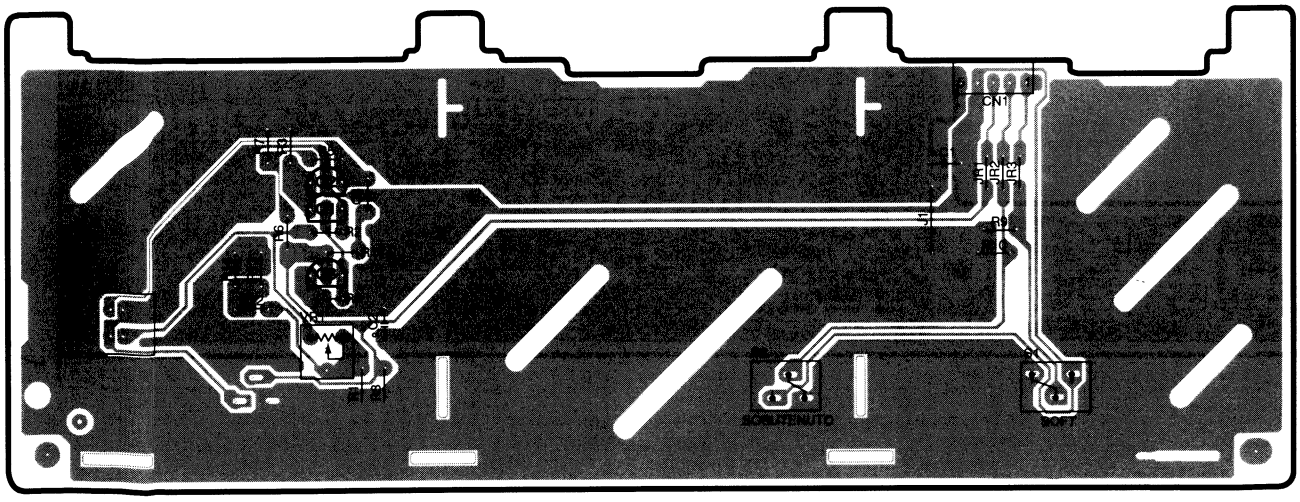
F INVR CIRCUIT



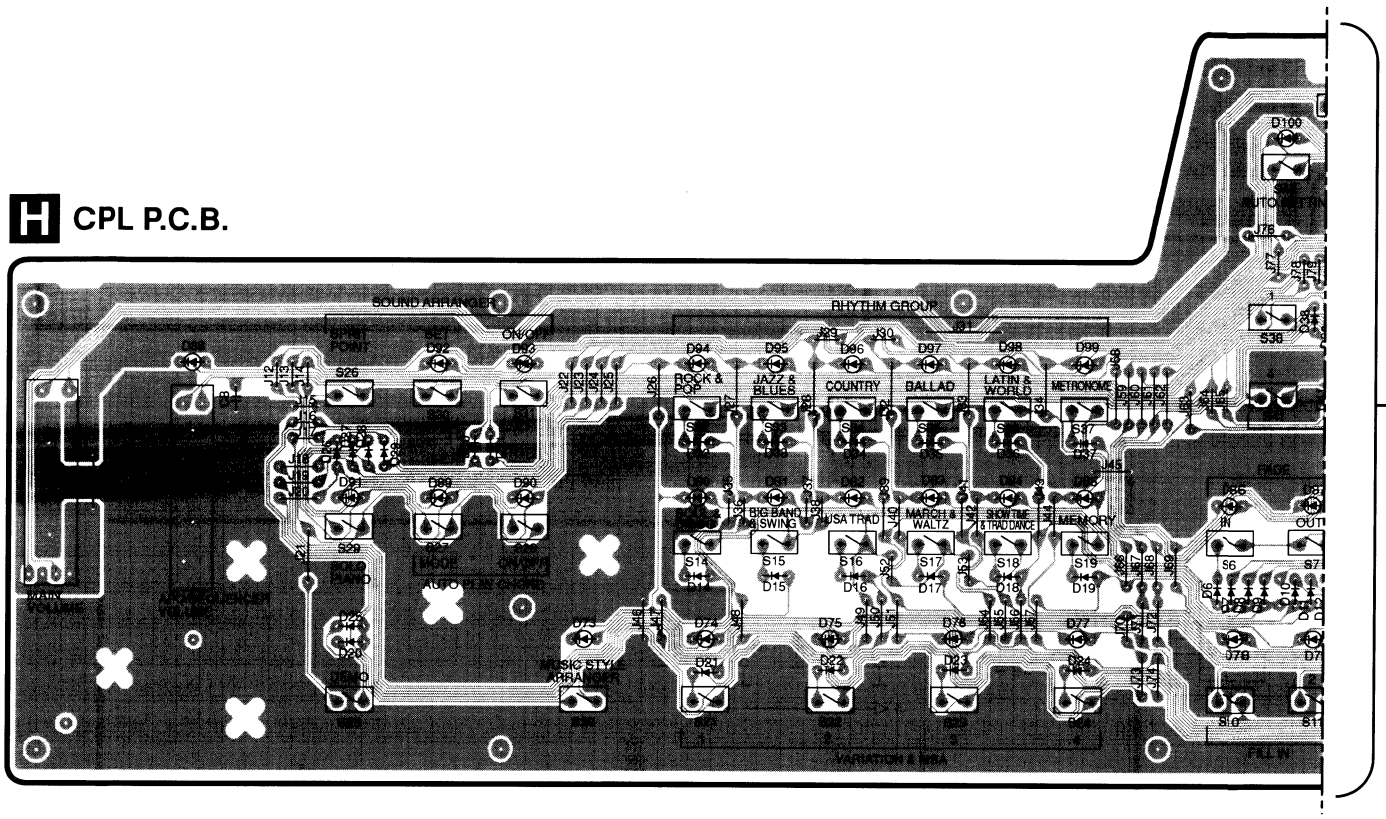
G PKB CIRCUIT



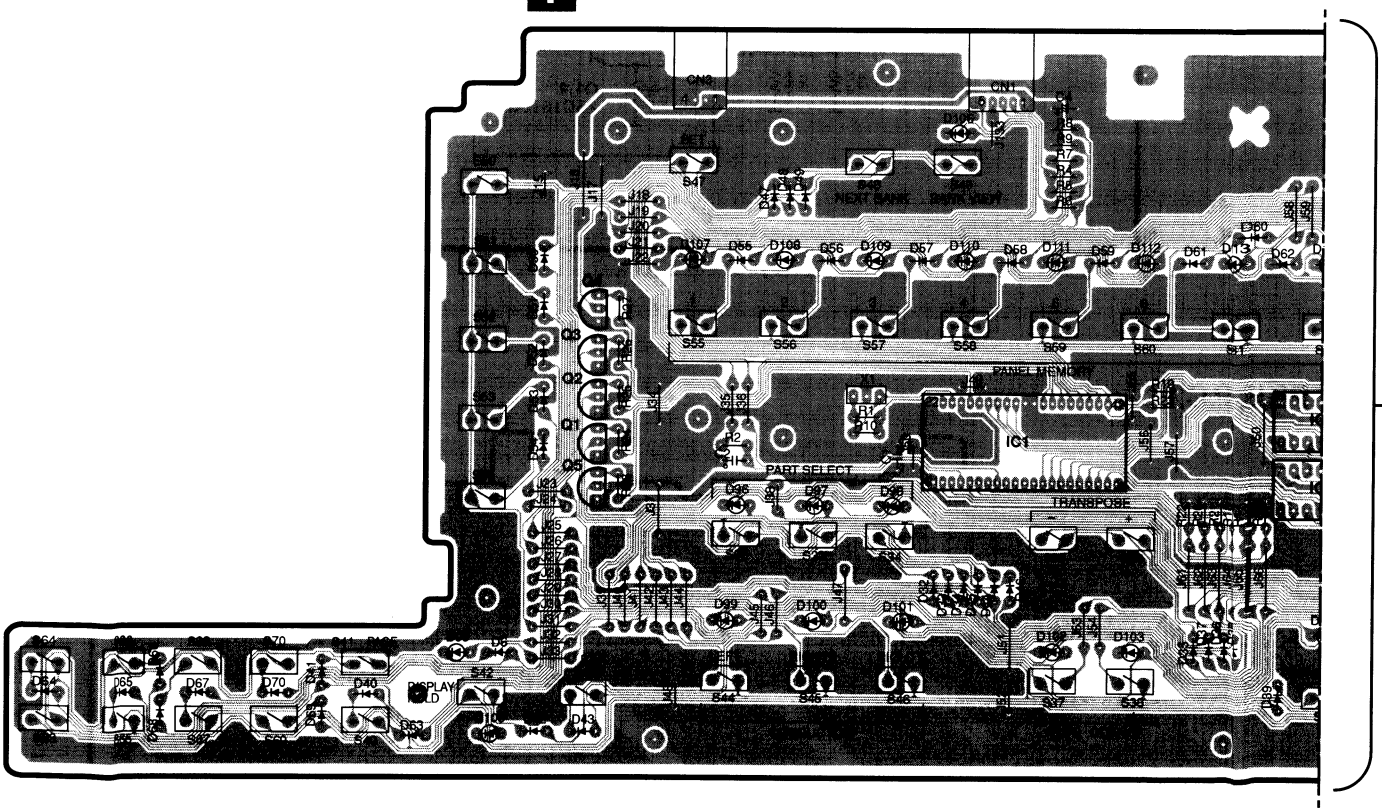
G PKB P.C.B.

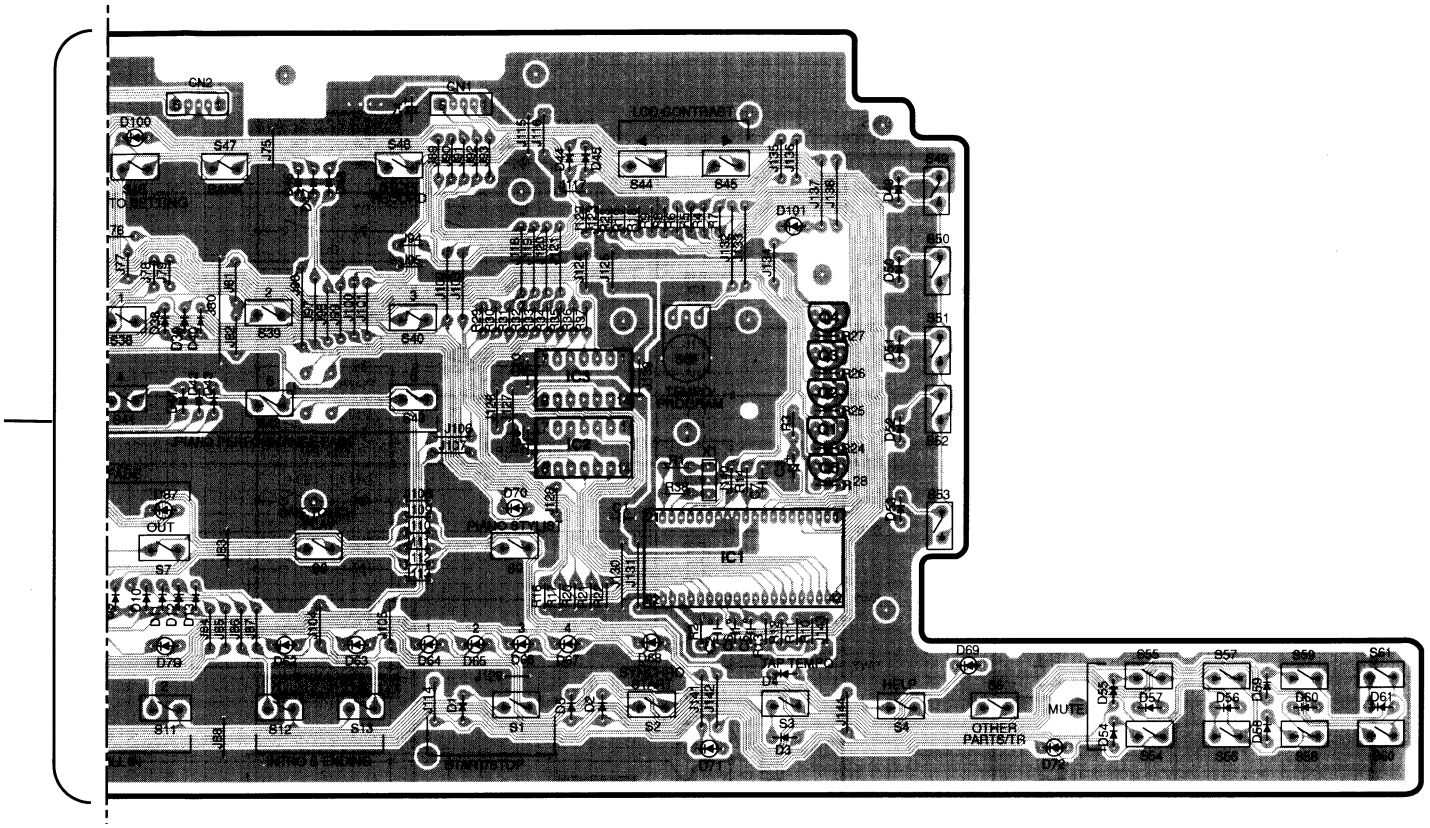


H CPL P.C.B.

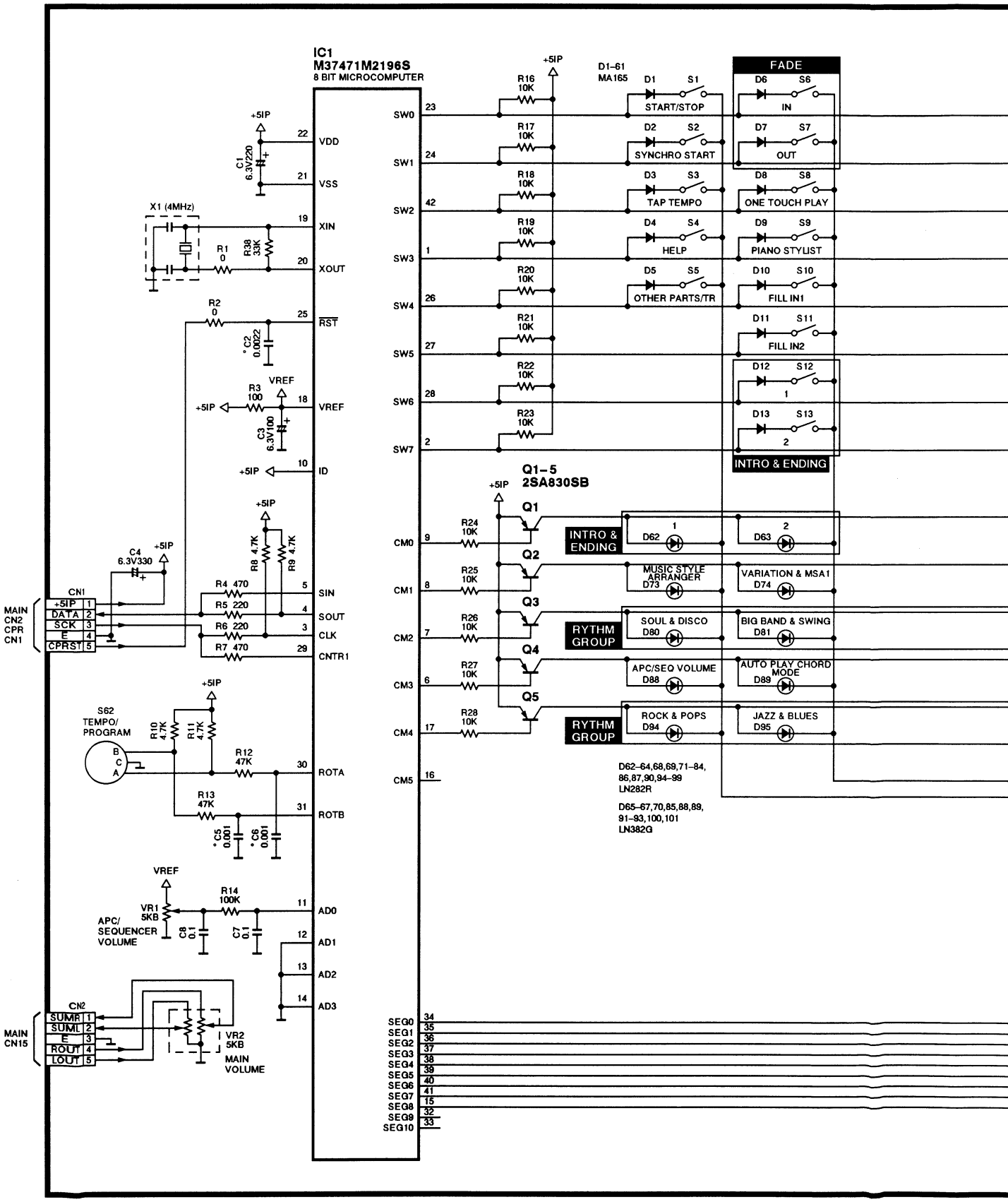


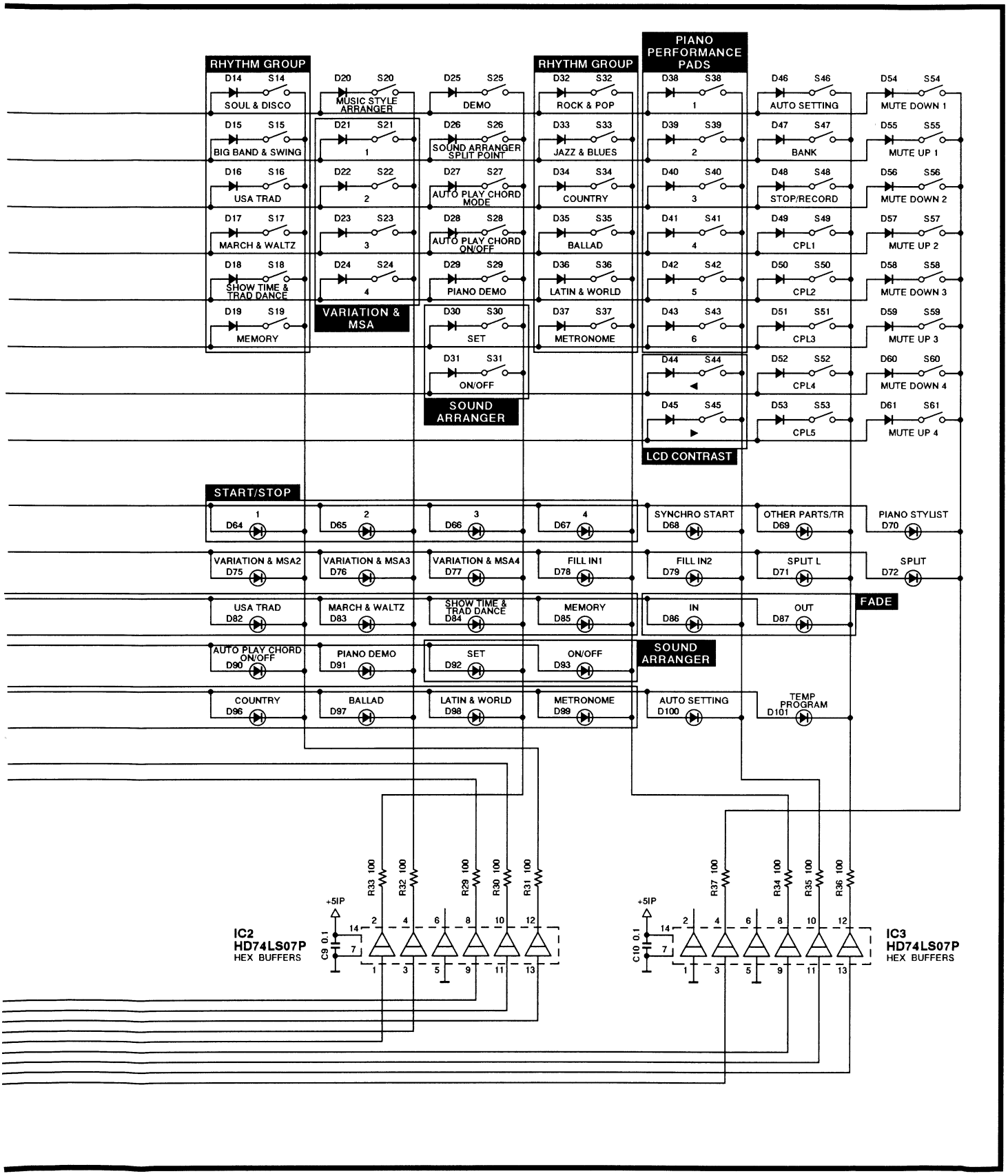
I CPR P.C.B.



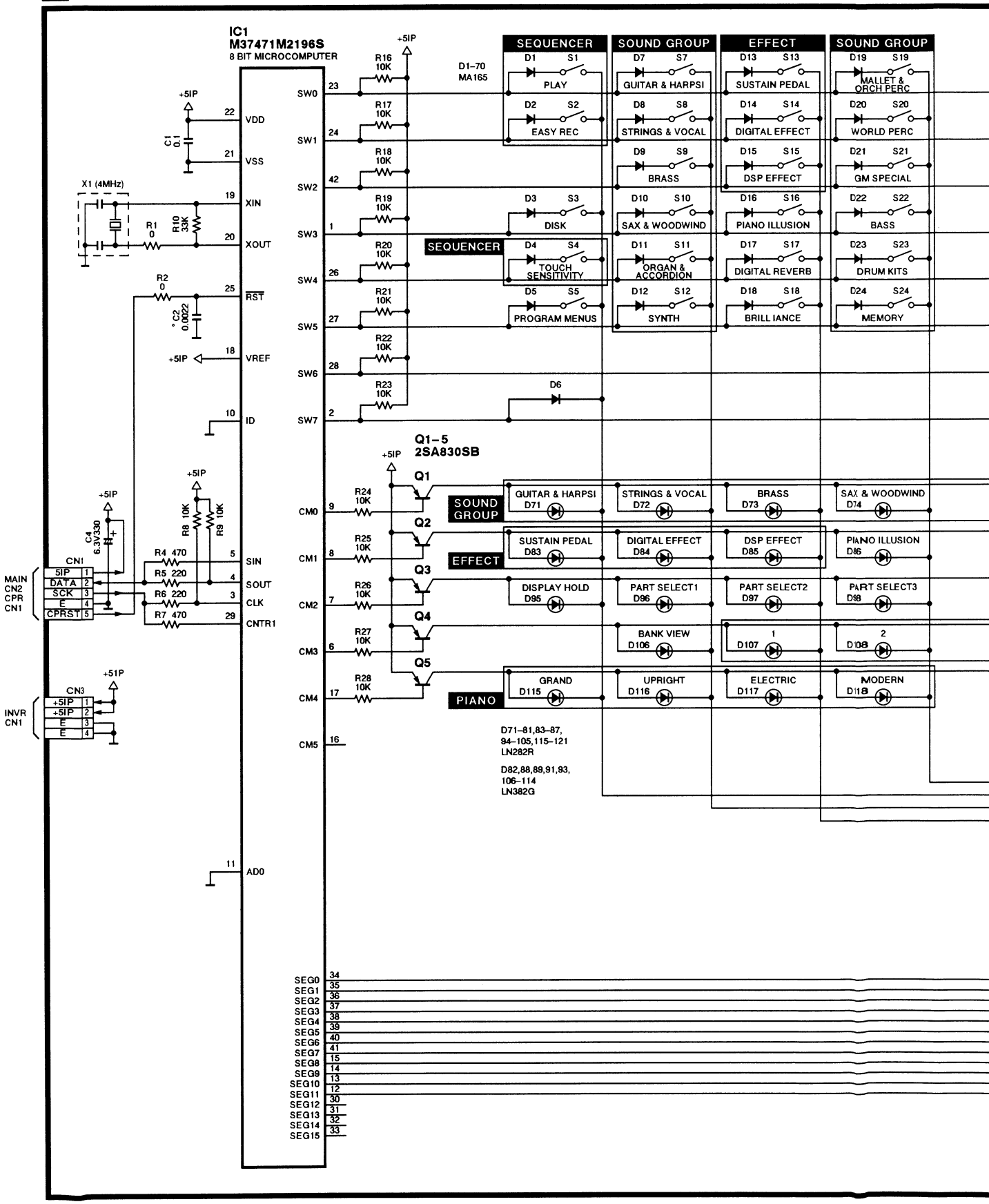

CN2
CN1
LCD CONTRAST
D100
S47
S48
S44
S45
D101
S50
S51
S52
S53
S39
S40
IC3
IC2
IC1
D87
OUT
S7
D79
D70
PIANO STYLE
S11
S12
S13
S1
S2
S3
S4
D71
D69
HELP
OTHER PARTS/TR
MUTE
D72
S55
S57
S59
S61
D57
D56
D60
D61
S54
S58
S60
S62
D62
D114
SOUND GROUP
D73
D74
D75
D76
GUITAR & STRINGS
BASS
SAX & WOODWINDS
ORGAN & ACCORDION
SYNTH
S12
D77
D78
D79
D80
D81
D82
WORLD
GM SPECIAL
BASS
DRUM KITS
MEMORY
S18
D104
D115
D116
D117
D118
D119
D120
D121
S39
S20
S21
S22
S23
PIANO
MODELING
ELECTRIC PIANO
PIANO MIXTURES
ORCHESTRAL MIXTURES
DIGITAL DRAWBAR

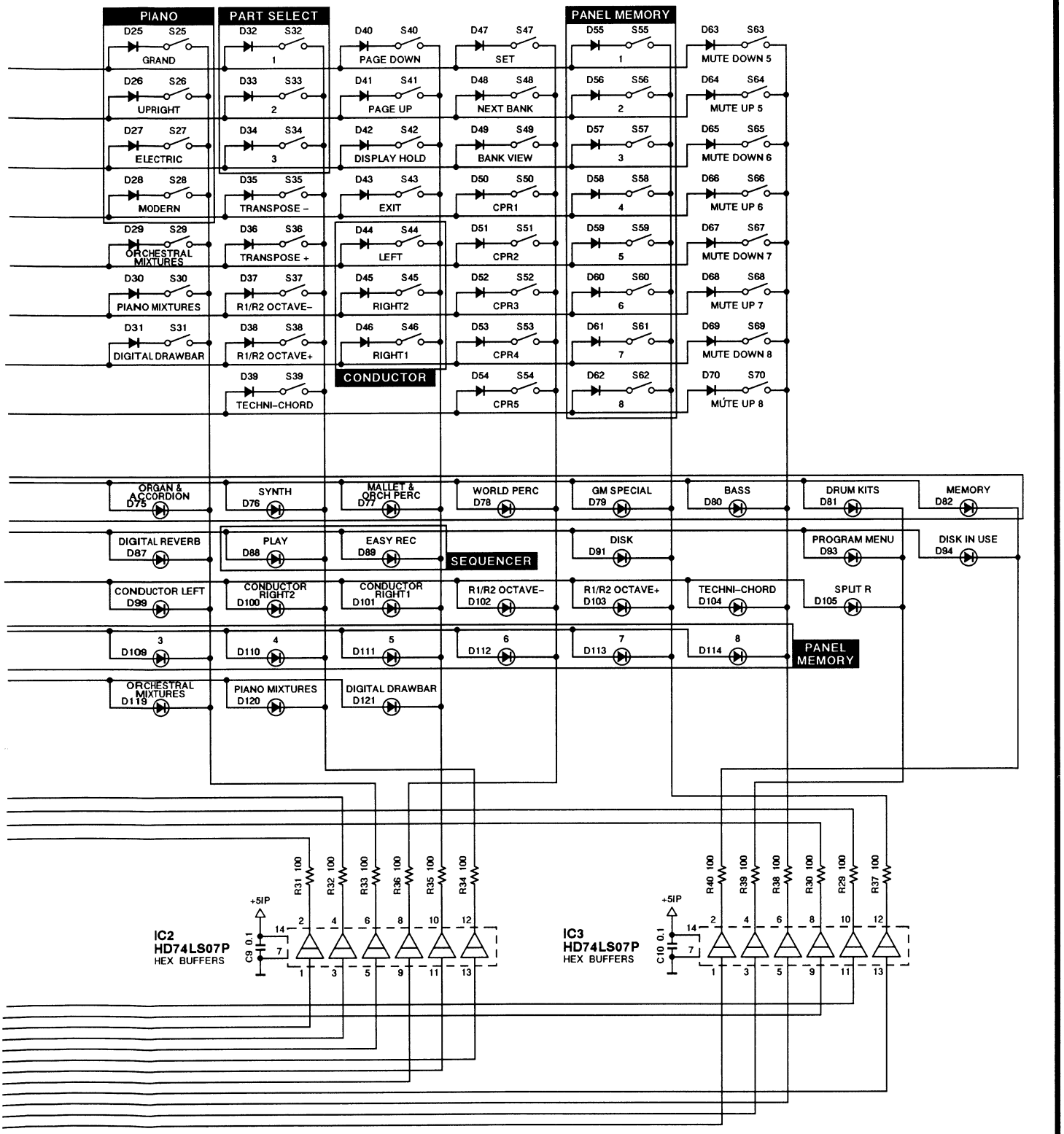
H CPL CIRCUIT



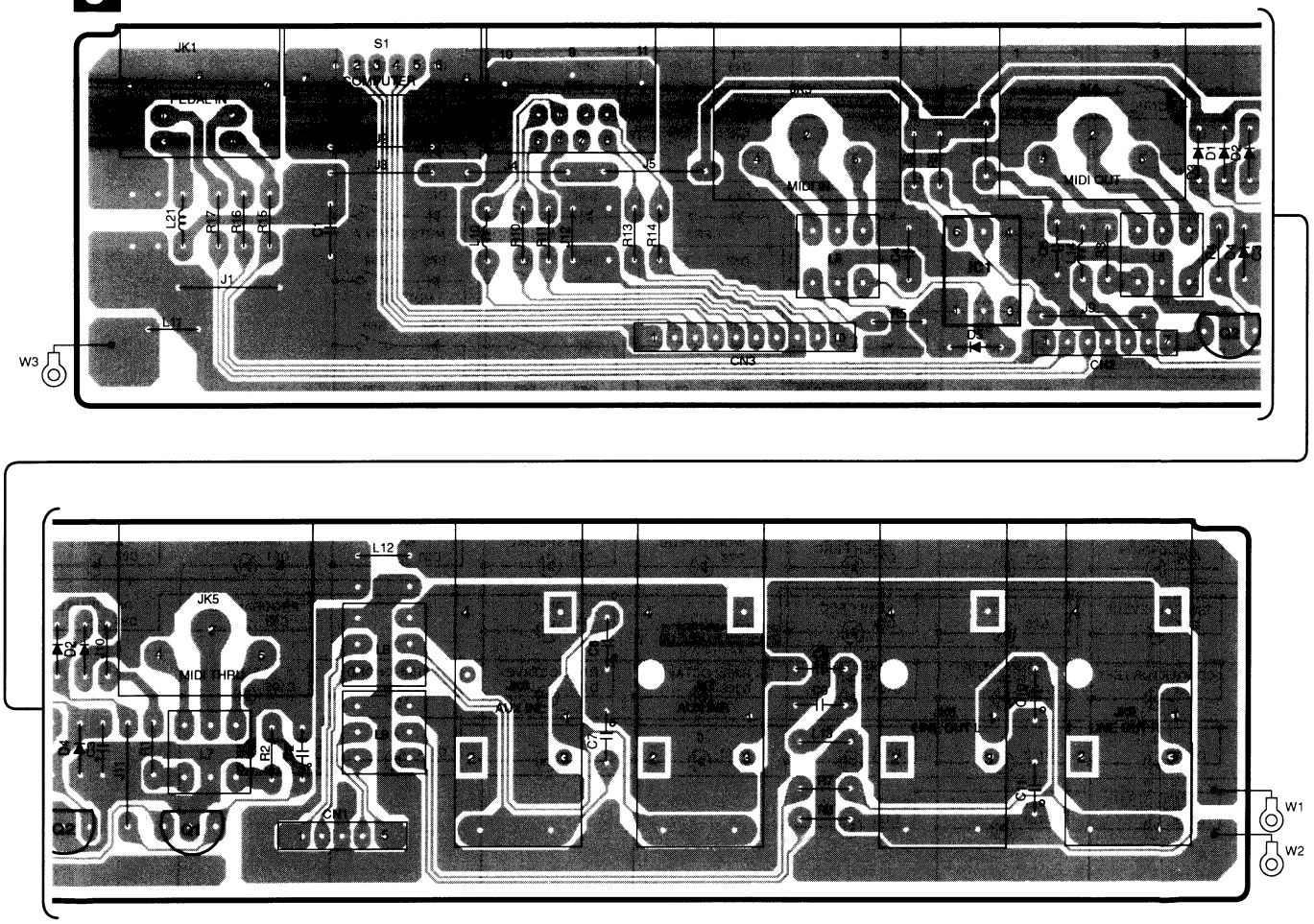

RHYTHM GROUP
D14 S14 SOUL & DISCO
D15 S15 BIG BAND & SWING
D16 S16 USA TRAD
D17 S17 MARCH & WALTZ
D18 S18 SHOW TIME & TRAD DANCE
D19 S19 MEMORY
D20 S20 MUSIC STYLE ARRANGER
D21 S21 1
D22 S22 2
D23 S23 3
D24 S24 4
VARIATION & MSA
D25 S25 DEMO
D26 S26 SOUND ARRANGER SPLIT POINT
D27 S27 AUTO PLAY CHORD MODE
D28 S28 AUTO PLAY CHORD ON/OFF
D29 S29 PIANO DEMO
D30 S30 SET
D31 S31 ON/OFF
SOUND ARRANGER
RHYTHM GROUP
D32 S32 ROCK & POP
D33 S33 JAZZ & BLUES
D34 S34 COUNTRY
D35 S35 BALLAD
D36 S36 LATIN & WORLD
D37 S37 METRONOME
PIANO PERFORMANCE PADS
D38 S38 1
D39 S39 2
D40 S40 3
D41 S41 4
D42 S42 5
D43 S43 6
D44 S44 ◀
D45 S45 ▶
LCD CONTRAST
D46 S46 AUTO SETTING
D47 S47 BANK
D48 S48 STOP/RECORD
D49 S49 CPL1
D50 S50 CPL2
D51 S51 CPL3
D52 S52 CPL4
D53 S53 CPL5
D54 S54 MUTE DOWN 1
D55 S55 MUTE UP 1
D56 S56 MUTE DOWN 2
D57 S57 MUTE UP 2
D58 S58 MUTE DOWN 3
D59 S59 MUTE UP 3
D60 S60 MUTE DOWN 4
D61 S61 MUTE UP 4
START/STOP
1 D64
2 D65
3 D66
4 D67
SYNCHRO START D68
OTHER PARTS/TR D69
PIANO STYLIST D70
VARIATION & MSA2 D75
VARIATION & MSA3 D76
VARIATION & MSA4 D77
FILL IN1 D78
FILL IN2 D79
SPLIT L D71
SPLIT D72
USA TRAD D82
MARCH & WALTZ D83
SHOW TIME & TRAD DANCE D84
MEMORY D85
IN D86
OUT D87
FADE
AUTO PLAY CHORD ON/OFF D90
PIANO DEMO D91
SET D92
ON/OFF D93
SOUND ARRANGER
COUNTRY D96
BALLAD D97
LATIN & WORLD D98
METRONOME D99
AUTO SETTING D100
TEMP PROGRAM D101
R33 100
R32 100
R29 100
R30 100
R31 100
+5IP
C9 0.1
IC2
HD74LS07P
HEX BUFFERS
R37 100
R34 100
R35 100
R36 100
+5IP
C10 0.1
IC3
HD74LS07P
HEX BUFFERS

I CPR CIRCUIT

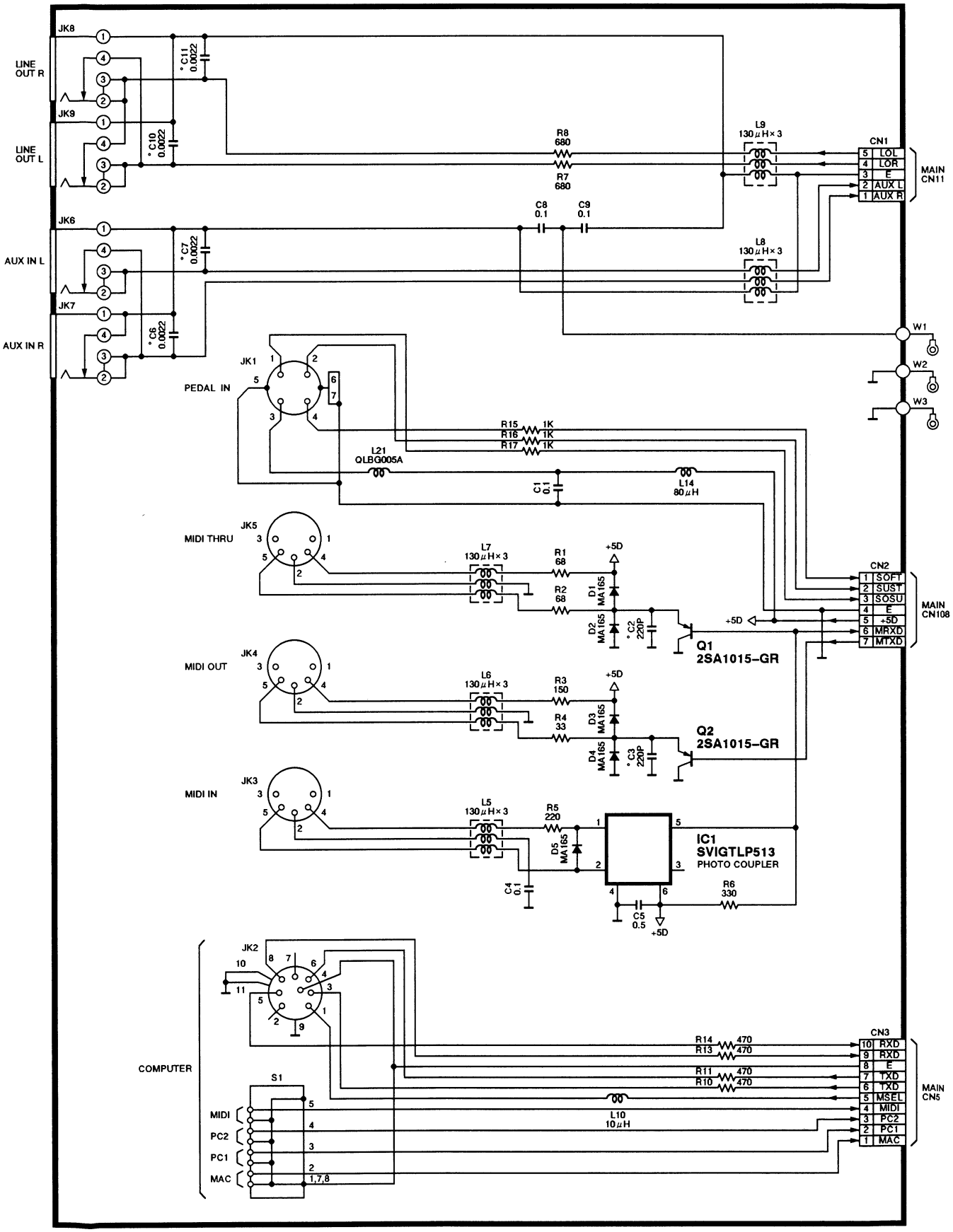



PIANO
PART SELECT
PANEL MEMORY
D25 S25 GRAND
D26 S26 UPRIGHT
D27 S27 ELECTRIC
D28 S28 MODERN
D29 S29 ORCHESTRAL MIXTURES
D30 S30 PIANO MIXTURES
D31 S31 DIGITAL DRAWBAR
D32 S32 1
D33 S33 2
D34 S34 3
D35 S35 TRANSPOSE –
D36 S36 TRANSPOSE +
D37 S37 R1/R2 OCTAVE–
D38 S38 R1/R2 OCTAVE+
D39 S39 TECHNI-CHORD
D40 S40 PAGE DOWN
D41 S41 PAGE UP
D42 S42 DISPLAY HOLD
D43 S43 EXIT
D44 S44 LEFT
D45 S45 RIGHT2
D46 S46 RIGHT1
CONDUCTOR
D47 S47 SET
D48 S48 NEXT BANK
D49 S49 BANK VIEW
D50 S50 CPR1
D51 S51 CPR2
D52 S52 CPR3
D53 S53 CPR4
D54 S54 CPR5
D55 S55 1
D56 S56 2
D57 S57 3
D58 S58 4
D59 S59 5
D60 S60 6
D61 S61 7
D62 S62 8
D63 S63 MUTE DOWN 5
D64 S64 MUTE UP 5
D65 S65 MUTE DOWN 6
D66 S66 MUTE UP 6
D67 S67 MUTE DOWN 7
D68 S68 MUTE UP 7
D69 S69 MUTE DOWN 8
D70 S70 MUTE UP 8
ORGAN & ACCORDION D75
SYNTH D76
MALLET & ORCH PERC D77
WORLD PERC D78
GM SPECIAL D79
BASS D80
DRUM KITS D81
MEMORY D82
DIGITAL REVERB D87
PLAY D88
EASY REC D89
SEQUENCER
DISK D91
PROGRAM MENU D93
DISK IN USE D94
CONDUCTOR LEFT D99
CONDUCTOR RIGHT2 D100
CONDUCTOR RIGHT1 D101
R1/R2 OCTAVE– D102
R1/R2 OCTAVE+ D103
TECHNI-CHORD D104
SPLIT R D105
3 D109
4 D110
5 D111
6 D112
7 D113
8 D114
PANEL MEMORY
ORCHESTRAL MIXTURES D119
PIANO MIXTURES D120
DIGITAL DRAWBAR D121
R31 100
R32 100
R33 100
R36 100
R35 100
R34 100
+5IP
C9 0.1
IC2
HD74LS07P
HEX BUFFERS
R40 100
R39 100
R38 100
R30 100
R29 100
R37 100
C10 0.1
IC3
HD74LS07P
HEX BUFFERS

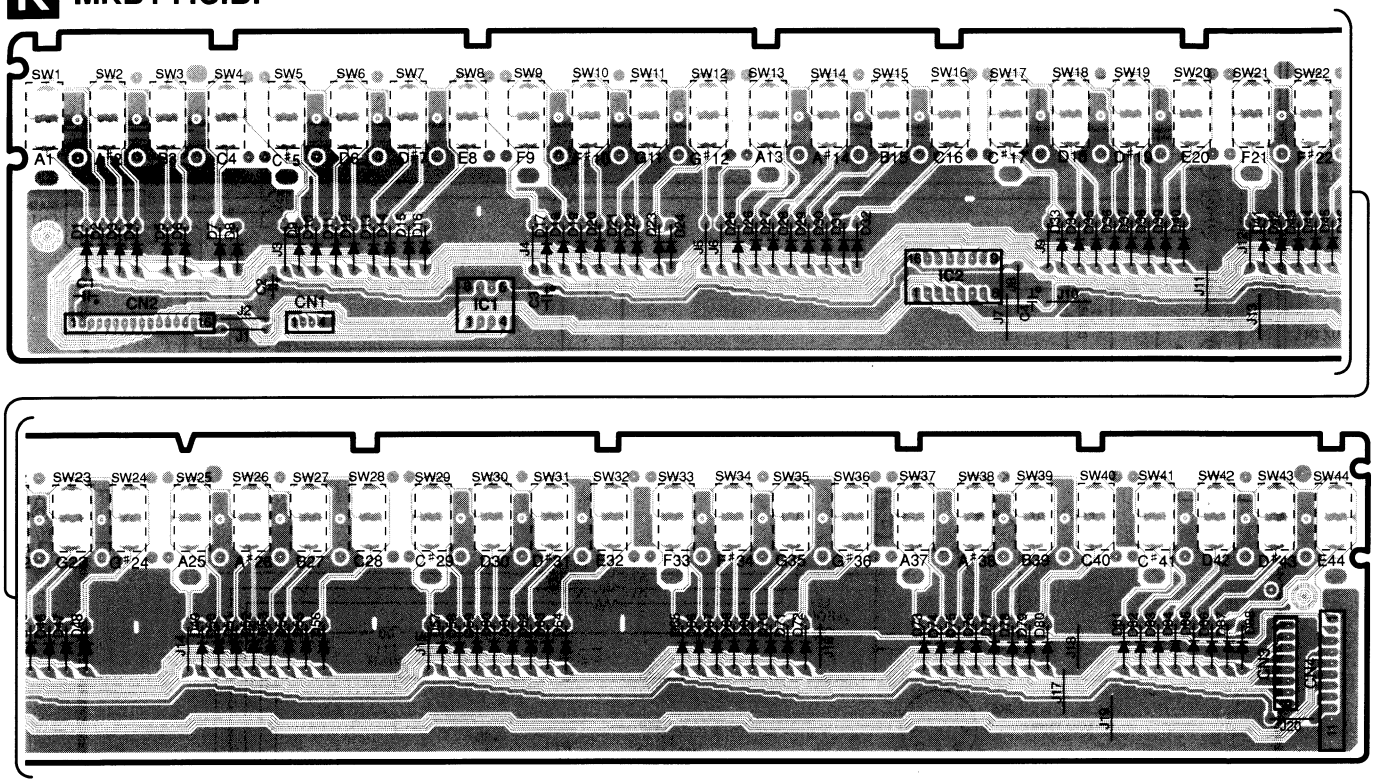
J JACK P.C.B.


JK1
S1
PEDAL IN
COMPUTER
MIDI IN
MIDI OUT
W3
CN3
CN2
JK5
MIDI THRU
LINE OUT
W1
W2

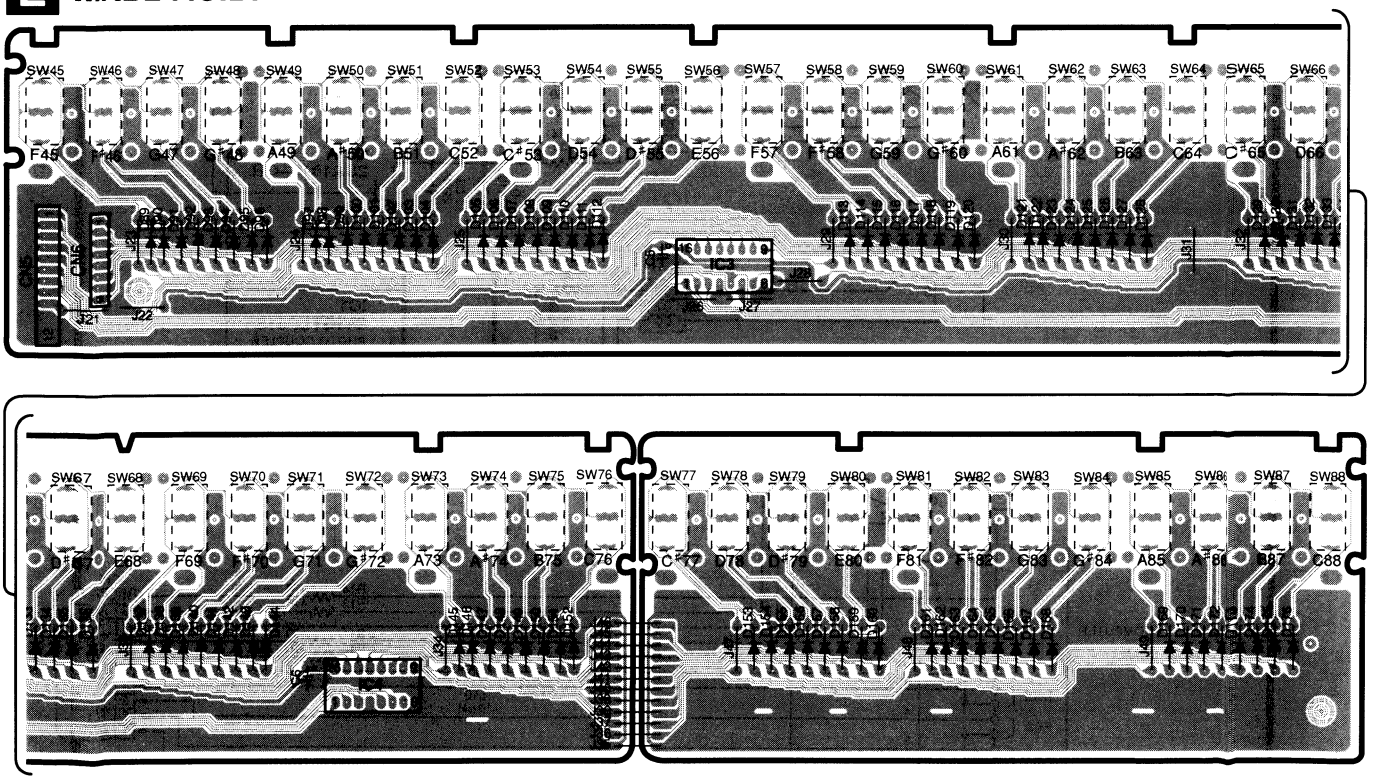
J JACK CIRCUIT



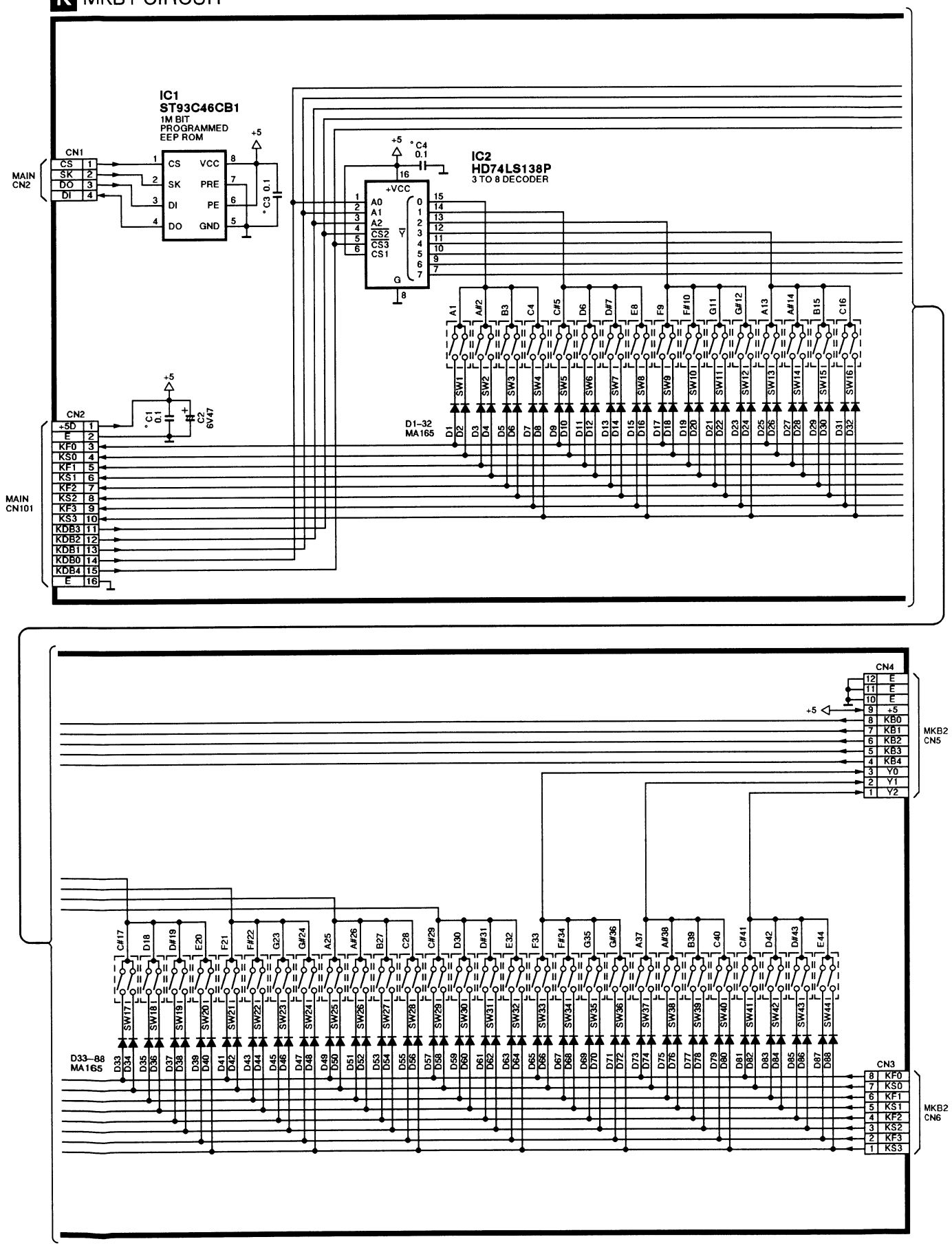
K MKB1 P.C.B.


SW1 SW2 SW3 SW4 SW5 SW6 SW7 SW8 SW9 SW10 SW11 SW12 SW13 SW14 SW15 SW16 SW17 SW18 SW19 SW20 SW21 SW22
SW23 SW24 SW25 SW26 SW27 SW28 SW29 SW30 SW31 SW32 SW33 SW34 SW35 SW36 SW37 SW38 SW39 SW40 SW41 SW42 SW43 SW44
CN2
CN1
IC1
IC2

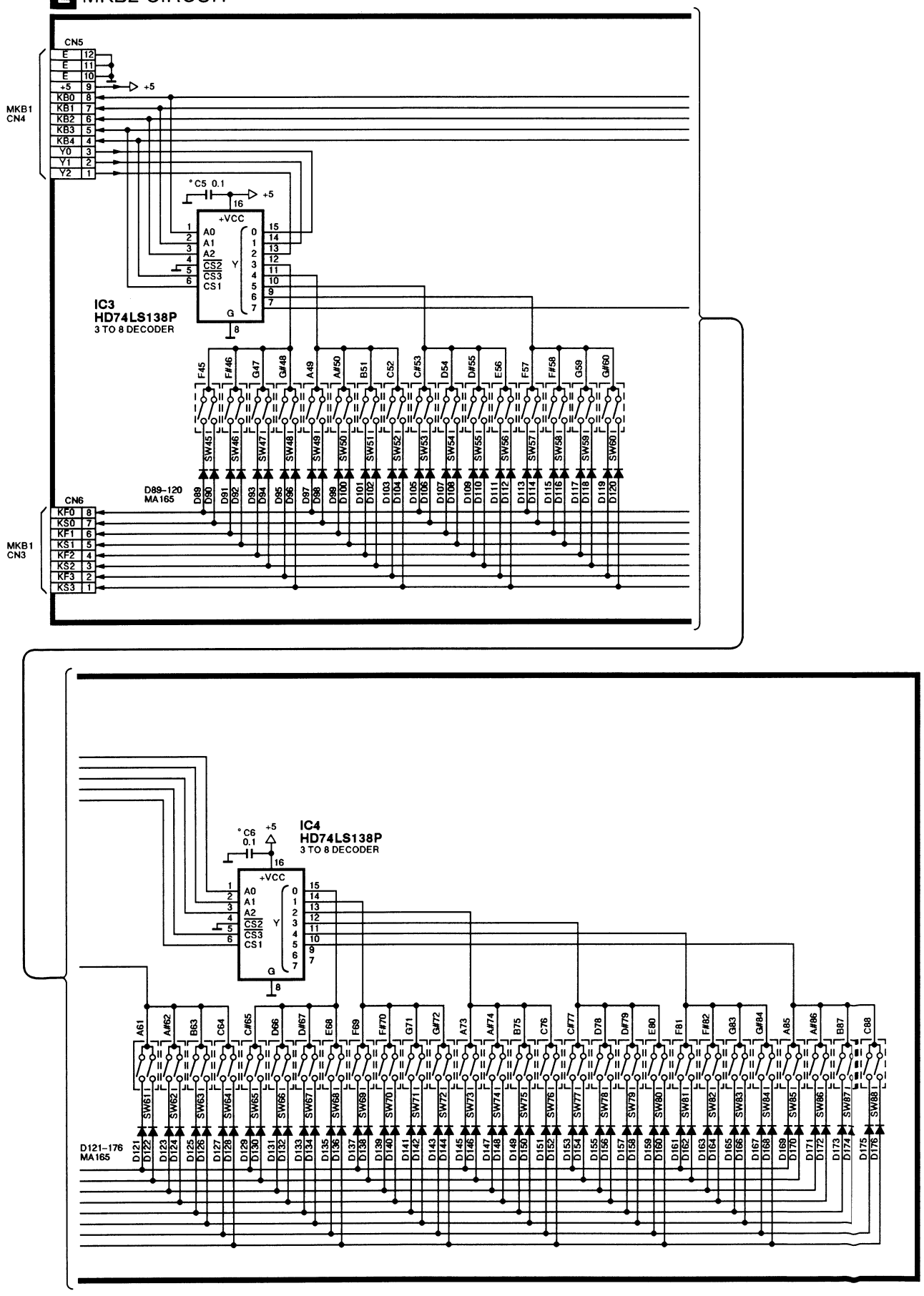
L MKB2 P.C.B.


SW45 SW46 SW47 SW48 SW49 SW50 SW51 SW52 SW53 SW54 SW55 SW56 SW57 SW58 SW59 SW60 SW61 SW62 SW63 SW64 SW65 SW66
SW67 SW68 SW69 SW70 SW71 SW72 SW73 SW74 SW75 SW76
SW77 SW78 SW79 SW80 SW81 SW82 SW83 SW84 SW85 SW86 SW87 SW88
CN3
IC3

K MKB1 CIRCUIT



L MKB2 CIRCUIT



REPLACEMENT PARTS LIST.....P.C.B. and Wiring Parts

Notes:

1. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retension period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention.
   After the end of this period, the assembly will no longer be available.
2. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts.
5. For part No. with area mark, check the area when placing an order.

■PRINTED CIRCUIT BOARD

	RTL	Area	Part No.	Description	P/S
○	RTL		SXPG230011	MAIN	1
○	RTL		SXPG229871A	AS INCLUDE ASUB	1
○	RTL	EN EK EZ EW EF EA EP EH XL XR XP XW	SXPG230511	ACP	1
○	RTL	M MC XM	SXPG230521	ACP	1
○	RTL	X XS XT XD	SXPG230551	ACP	1
○	RTL		SXPG229631A	CPL	1
○	RTL		SXPG229731A	CPR	1
○	RTL		SXPG229731B	JACK2	1
○	RTL		SXPG229711C	INVR	1
	RTL		SXPG229911	JACK	1
	RTL		SXPG226611A	MKB1	1
	RTL		SXPG226611B	MKB2	1
	RTL		SXPG218211	PKB	1
	RTL		QSLG023AA	LCD	1

MAIN MAIN CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUITS			
	IC1	QSIGX3C08007	8M BIT MASK ROM	1
	IC2	TC7W14F	INVERTER	1
	IC3	QSIGX3C08006	8M BIT MASK ROM	1
	IC4	QVIGFPR902AX1	8M BIT FLASH ROM W/PROGRAM DISK	1
	IC5	TMP94C241AF	MAIN CPU	1
	IC6	QVIGFPR902AX1	8M BIT FLASH ROM W/PROGRAM DISK	1
	IC7	TC74VHC08F	QUAD 2 INPUT AND GATE	1
	IC8	TC7S08F	IC, CMOS LOGIC	1
	IC9, 10	M5M44265CJ6S	4M BIT DYNAMIC RAM	2
	IC11	TC74HC138AF	3 TO 8 DECODER	1
	IC12	BR93LC56RFE2	1K BIT PROGRAMMED EEP ROM	1
	IC13	TC74HC74AF	DUAL D FLIP-FLOP	1
○	IC14	QSIGX3C24005	24M BIT RHYTHM DATA ROM	1
	IC15	TC7S08F	IC, CMOS LOGIC	1
	IC16	TC7S32F	2 INPUT OR GATE	1
	IC17, 18	TC7S04F	INVERTER	2
	IC20	D74HC32GS	QUAD 2 INPUT OR GATE	1
	IC22, 23	D74HC374GS	D TYPE FLIP FLOP	2
	IC25	M5M34051FP	BUS TRANSCEIVER	1
	IC27	TMP94C241AF	MAIN CPU	1
	IC28, 29	M5M44265CJ6S	4M BIT DYNAMIC RAM	2
	IC30	QSIGX3C01001	1M BIT MASK ROM	1
	IC32	TC7S08F	IC, CMOS LOGIC	1
	IC33	TC7W14F	INVERTER	1
	IC34	BA10393F	COMPARATOR	1
	IC36	MN1382QTX	RESET IC	1
	IC101	M5223FPE1	OPERATIONAL AMPLIFIER	1
	IC102	TC7W74F	INVERTER	1
	IC103	TC203C220004	TONE GENERATOR LSI	1
	IC104	QSIGU3C32537	32M BIT MASK ROM	1
	IC105	QSIGU3C32536	32M BIT MASK ROM	1
	IC106	QSIGU3C32539	32M BIT MASK ROM	1
	IC107	QSIGU3C32538	32M BIT MASK ROM	1
	IC108	M5M44265CJ6S	4M BIT DYNAMIC RAM	1
	IC109	TC7SU04F	INVERTER	1
	IC110	TMS57070FFT	DIGITAL SIGNAL PROCESSOR	1
	IC111	PCM1800E-T1	A/D CONVERTER	1
	IC112	T74VHC161FTL	BINARY COUNTER	1
	IC113	TC7W74FU	INVERTER	1
	IC114	T74VHC164FTL	SHIFT REGISTER	1
	IC115	TC7SH08FU	2 INPUT AND GATE	1
	IC116	TC7SH02FU	QUAD 2 INPUT NOR GATE	1
	IC117	TC7SH32FU	2 INPUT OR GATE	1
	IC118	TC7SH08FU	2 INPUT AND GATE	1
	IC119	T74VHC164FTL	SHIFT REGISTER	1
	IC120	TC7SH32FU	2 INPUT OR GATE	1
	IC121	PCM1702U	D-A CONVERTER	1
	IC122	PCM1702U	D-A CONVERTER	1
	IC123	M5218AFP	OPERATIONAL AMPLIFIER	1
	IC124	M5218AFP	OPERATIONAL AMPLIFIER	1
	IC201	TC7SH08FU	2 INPUT AND GATE	1
	IC202	T7WU04F	TRIPLE INVERTER	1
	IC203	TC7SH02FU	QUAD 2 INPUT NOR GATE	1
	IC204	TC7SH32FU	2 INPUT OR GATE	1
	IC205	TC7SH32FU	2 INPUT OR GATE	1
	IC206	MN89304	LCD CONTROLLER	1
	IC207	M5M44265CJ6S	4M BIT DYNAMIC RAM	1
	IC208	D72070GF3BE	8BIT MICROCONTROLLER	1
	TRANSISTORS			
	Q1	2SD601AQ	TRANSISTOR	1
	Q2	2SB709AR	TRANSISTOR	1
	Q3	2SD601AQ	TRANSISTOR	1
S	Q4	2SC1815GR	TRANSISTOR	1
	Q5	2SB709AR	TRANSISTOR	1
	Q7	2SD601AQ	TRANSISTOR	1
	Q8	2SB946P	TRANSISTOR	1
	Q9	2SC2240GTPE2	TRANSISTOR	1
	Q101	2SD592ARS	TRANSISTOR	1
	Q102	2SD601AQ	TRANSISTOR	1
	Q103	2SB709AR	TRANSISTOR	1
	Q201, 202	2SD601AQ	TRANSISTOR	2
	Q203	2SB709AR	TRANSISTOR	1
	DIODES			
	D1, 2	SVDGERA1502	RECTIFIER	2
	D3	MA110	DIODE	1

	Ref. No.		Part No.	Description	P/S
	D4		MA8030L	ZENER, 2.9V	1
	D5, 6		MA110	DIODE	2
	D7		MA151WK	DIODE	1
	D8-12		MA110	DIODE	5
	D13		MA151WK	DIODE	1
○	D14		MA1240MTR	ZENER	1
	D15		MA151WK	DIODE	1
	D17		MA110	DIODE	1
○	D18		MA1240MTR	ZENER	1
	D19		MA8082M	ZENER, 8.2V	1
	D20		MA8051L	ZENER, 5.1V	1
	D21, 22		MA110	DIODE	2
	D23		MA738	DIODE	1
	D24	⚠	MA2062LF	ZENER, 6.2V	1
	D26		MA1360	ZENER	1
	D27		MA110	DIODE	1
	D101, 102		MA8056	ZENER, 5.6V	2
	OSCILLATORS				
○	X1		QSXG1A0800A	8MHz, CRYSTAL OSCILLATOR	1
	X4		QSXG2F1000A	10MHz, CERAMIC OSCILLATOR	1
	X101		QSXG1I3386A	33.8688MHZ, CRYSTAL OSCILLATOR	1
	X102		QSXG1A2500A	25MHz, QUARTZ OSCILLATOR	1
	X201		QSXG2F2400A	24MHz, CERAMIC OSCILLATOR	1
	X202		QSXG2F2400A	24MHz, CERAMIC OSCILLATOR	1
	COMPONENT COMBINATIONS				
	Z1		EXBV8V101J	100Ω×4	1
	Z2		EXBS8V472J	4.7kΩ×4	1
	Z3		EXBS8V101J	100Ω×4	1
	Z4, 5		EXBV8V472J	4.7KΩ×4	2
	Z6, 7		EXBS8V472J	4.7kΩ×4	2
	Z8, 9		EXBS8V101J	100Ω×4	2
	Z10		EXBS8V470J	47Ω×4	1
	Z11		EXBS8V470J	47Ω×4	1
	Z12, 13		EXBS8V101J	100Ω×4	2
	Z14		EXBS8V470J	47Ω×4	1
	Z15, 16		EXBS8V101J	100Ω×4	2
	Z17		EXBV8V101J	100Ω×4	1
	Z18, 20		EXBS8V221J	220Ω×4	2
	Z21～24		EXBV8V472J	4.7KΩ×4	4
	Z101, 102		EXBS8V471J	470Ω×4	2
	Z103, 104		EXBV8V472J	4.7KΩ×4	2
	Z105		EXBS8V471J	470Ω×4	1
	Z106～119		EXBV8V221J	220Ω×4	14
	Z120		EXBV8V101J	100Ω×4	1
	Z201～204		EXBS8V331J	330Ω×4	4
	Z205		EXBV8V331J	330Ω×4	1
	Z206, 207		EXBV8V221J	220Ω×4	2
	Z208, 209		EXBV8V101J	100Ω×4	2
	Z210		EXBV8V102J	1KΩ×4	1
	COILS				
	L1		BK2125LM252T	COIL	1
	L2		SLCG2A121TZ	COIL	1
	L3～38		BK2125LM252T	COIL	36
	L201	⚠	QLBG005A	COIL	1
	IC PROTECTOR				
	IP1	⚠	ICP-N38T104	IC PROTECTOR	1

	Ref. No.		Part No.	Description	P/S
	WIRE				
	W1		QEXGRA01005A	WIRE	1
	RESISTORS				
	JP1, 3, 102, 103, 105, 107, 109		ERJ6GEY0R00V	0Ω	7
	JR5, 7		ERJ6GEYJ101V	100Ω	2
	R1, 2		ERJ6GEYJ472V	4.7kΩ	2
	R3		ERJ6GEYJ103V	10kΩ	1
	R4		ERJ6GEYJ101V	100Ω	1
	R5		ERJ6GEYJ102V	1kΩ	1
	R6		ERJ6GEYJ101V	100Ω	1
	R7		ERJ6GEYJ221V	220Ω	1
	R8		ERJ6GEYJ472V	4.7kΩ	1
	R9		ERJ6GEYJ104V	100kΩ	1
	R10		ERJ6GEYJ102V	1kΩ	1
	R11		ERJ6GEYJ222V	2.2kΩ	1
	R12		ERJ6GEYJ102V	1kΩ	1
	R13		ERJ6GEYJ104V	100kΩ	1
	R14, 15		ERJ6GEYJ101V	100Ω	2
	R16		ERJ6GEYJ472V	4.7kΩ	1
	R17		ERJ6GEYJ104V	100kΩ	1
	R18		ERJ6GEYJ102V	1kΩ	1
	R19		ERJ6GEYJ472V	4.7kΩ	1
	R20		ERJ6GEYJ101V	100Ω	1
	R21		ERJ6GEYJ105V	1MΩ	1
	R22		ERJ6GEYJ470V	47Ω	1
	R23, 24		ERJ6GEYJ101V	100Ω	2
	R25		ERJ6GEYJ470V	47Ω	1
	R26		ERJ6GEYJ472V	4.7kΩ	1
	R27		ERJ6GEYJ470V	47Ω	1
	R28		ERJ6GEYJ472V	4.7kΩ	1
	R29, 30		ERJ6GEYJ104V	100kΩ	2
	R31		ERJ6GEYJ103V	10kΩ	1
	R32		ERJ6GEYJ102V	1kΩ	1
	R33～36		ERJ6GEYJ472V	4.7kΩ	4
	R37, 40～42		ERJ6GEYJ101V	100Ω	4
	R43, 44		ERJ6GEYJ472V	4.7kΩ	2
	R46		ERJ6GEYJ101V	100Ω	1
	R47		ERJ6GEY0R00V	0Ω	1
	R48	⚠	ERG2SJ100E	10Ω, 2W, FLAME-PROOF	1
	R49, 50		ERJ6GEYJ102V	1kΩ	2
	R51		ERJ6GEYJ101V	100Ω	1
	R52		ERJ6GEYJ472V	4.7kΩ	1
	R53	⚠	ERG2SJ100E	10Ω, 2W, FLAME-PROOF	1
○	R54	⚠	ERG2SJ102E	1KΩ, 2W, FLAME-PROOF	1
	R55, 56		ERJ6GEYJ471V	470Ω	2
	R57		ERJ6GEYJ101V	100Ω	1
	R58		ERJ6GEYJ105V	1MΩ	1
	R59		ERJ6GEYJ470V	47Ω	1
	R60～63		ERJ6GEYJ101V	100Ω	4
	R64, 65		ERJ6GEYJ102V	1kΩ	2
	R66		ERJ6GEYJ101V	100Ω	1
	R67		ERJ6GEYJ102V	1kΩ	1
	R70, 71		ERJ6GEY0R00V	0Ω	2
	R72		ERJ6GEYJ472V	4.7kΩ	1
○	R73	⚠	ERG1SJ102E	1KΩ, 1W, FLAME-PROOF	1
	R74		ERJ6GEYJ101V	100Ω	1
	R75, 76		ERJ6GEYJ472V	4.7kΩ	2
	R77, 78		ERJ6GEYJ101V	100Ω	2
	R79		ERJ6GEYJ151V	150Ω	1
	R80, 81		ERJ6GEYJ472V	4.7kΩ	2
	R82		ERJ6GEYJ103V	10kΩ	1
	R83		ERJ6GEYJ332V	3.3kΩ	1
	R84		ERJ6GEYJ471V	470Ω	1
	R85		ERJ6GEYJ154V	150kΩ	1

Ref. No.	Part No.	Description	P/S
R86	ERJ6GEYJ102V	1kΩ	1
R87	ERJ6GEYJ334V	330kΩ	1
R88	ERJ6GEYJ151V	150Ω	1
R89	ERJ6GEYJ333V	33kΩ	1
R90	ERJ6GEYJ103V	10kΩ	1
R91	ERJ6GEYJ470V	47Ω	1
R92	ERJ6GEYJ681V	680Ω	1
R93	ERJ6GEYJ151V	150Ω	1
R94	ERJ6GEYJ681V	680Ω	1
R95	ERJ6GEYJ151V	150Ω	1
R96	ERJ6GEYJ470V	47Ω	1
R97, 98	ERJ6GEYJ472V	4.7kΩ	2
R99, 100	ERJ6GEYJ471V	470Ω	2
R101	ERJ6GEY0R00V	0Ω	1
R102	ERJ6GEYJ471V	470Ω	1
R103	ERJ6GEYJ105V	1MΩ	1
R104	ERJ6GEYJ472V	4.7kΩ	1
R105~107	ERJ6GEYJ102V	1kΩ	3
R108	ERJ6GEY0R00V	0Ω	1
R109~111	ERJ6GEYJ472V	4.7kΩ	3
R112, 113	ERJ6GEYJ221V	220Ω	2
R114	ERJ6GEYJ472V	4.7kΩ	1
R115	ERJ6GEYJ105V	1MΩ	1
R116	ERJ6GEYJ101V	100Ω	1
R117	ERJ6GEYJ472V	4.7kΩ	1
R118, 119	ERJ6GEYJ563V	56kΩ	2
R120, 121	ERJ6GEYJ332V	3.3kΩ	2
R122	ERJ6GEYJ682V	6.8kΩ	1
R123	ERJ6GEYJ123V	12kΩ	1
R124	ERJ6GEYJ682V	6.8kΩ	1
R125	ERJ6GEYJ123V	12kΩ	1
R126, 127	ERJ6GEYJ223V	22kΩ	2
R128~130	ERJ6GEYJ471V	470Ω	3
R131	ERJ6GEYJ102V	1kΩ	1
R132	ERJ6GEYJ682V	6.8kΩ	1
R133	ERJ6GEYJ682V	6.8kΩ	1
R134~136	ERJ6GEYJ471V	470Ω	3
R137	ERJ6GEYJ102V	1kΩ	1
R140, 141	ERJ6GEYJ101V	100Ω	2
R142	ERJ6GEYJ472V	4.7kΩ	1
R144, 145	ERJ6GEYJ471V	470Ω	2
R146	ERJ6GEYJ102V	1kΩ	1
R147	ERJ6GEYJ221V	220Ω	1
R148	ERJ6GEYJ681V	680Ω	1
R149	ERJ6GEYJ221V	220Ω	1
R151~158	ERJ6GEYJ101V	100Ω	8
R201	ERJ6GEYJ105V	1MΩ	1
R202	ERJ6GEYJ470V	47Ω	1
R203	ERJ6GEYJ221V	220Ω	1
R204	ERJ6GEYJ472V	4.7kΩ	1
R205	ERJ6GEYJ101V	100Ω	1
R206	ERJ6GEYJ331V	330Ω	1
R207	ERJ6GEYJ331V	330Ω	1
R208	ERJ6GEYJ101V	100Ω	1
R209, 210	ERJ6GEYJ103V	10kΩ	2
R211	ERJ6GEYJ221V	220Ω	1
R212	ERJ6GEYJ682V	6.8kΩ	1
R213	ERJ6GEYJ222V	2.2kΩ	1
R215	ERJ6GEYJ472V	4.7kΩ	1
R216	ERJ6GEYJ152V	1.5kΩ	1
R217	ERJ6GEYJ101V	100Ω	1
R218	ERJ6GEYJ682V	6.8kΩ	1
R219	ERJ6GEYJ102V	1kΩ	1
R220	ERJ6GEYJ103V	10kΩ	1
R221	ERJ6GEYJ470V	47Ω	1
R222	ERJ6GEYJ101V	100Ω	1
R224	ERJ6GEYJ102V	1kΩ	1

Ref. No.	Part No.	Description	P/S
CAPACITORS			
C1	ECUV1H220JCN	22pF	1
C2	ECUV1H103KBG	0.01μF	1
C3	ECUV1H104ZFX	0.1μF	1
C4	ECUV1H332KB	0.0033μF	1
C5	ECUV1H220JCN	22pF	1
C6	ECUV1H104ZFX	0.1μF	1
C7	ECUV1H104ZFX	0.1μF	1
C8	ECUV1C224KBX	0.22μF	1
C9	ECUV1H104ZFX	0.1μF	1
C10	ECUV1H101JG	100pF	1
C11~14	ECUV1H104ZFX	0.1μF	4
C15	ECUV1H330JCN	33pF	1
C16	ECUV1H101JG	100pF	1
C17	ECEA1CKA100	10μF, 16V	1
C18	ECUV1H330JCN	33pF	1
C19	ECUV1H103KBG	0.01μF	1
C20~29	ECUV1H104ZFX	0.1μF	10
C30	ECUV1H101JG	100pF	1
C31	ECUV1H104ZFX	0.1μF	1
C32	ECUV1H101JG	100pF	1
C33	ECUV1H104ZFX	0.1μF	1
C34	ECQV1H104JM	0.1μF	1
C37	ECA2AM220B	22μF, 100V	1
C39	ECUV1H104ZFX	0.1μF	1
C40	ECUV1H222KX	0.0022μF	1
C41	ECUV1H104ZFX	0.1μF	1
C42	ECUV1H101JG	100pF	1
C43	ECUV1H104ZFX	0.1μF	1
C44	ECA0JM471	470μF, 6.3V	1
C45	ECUV1H101JG	100pF	1
C49	ECUV1H101JG	100pF	1
C50	ECUV1H104ZFX	0.1μF	1
C52	ECEA1CKA100	10μF, 16V	1
C53	ECUV1H104ZFX	0.1μF	1
C54	EECS5R5V105	1F, 5.5V, MEMORY BACK-UP	1
C55~58	ECUV1H104ZFX	0.1μF	4
C59, 60	ECUV1H100DCN	10pF	2
C61~69	ECUV1H104ZFX	0.1μF	9
C70	ECA2AM220B	22μF, 100V	1
C71, 72	ECEA1CKA100	10μF, 16V	2
C73	ECUV1H682KBG	0.0068μF	1
C74	ECA0JM102	1000μF, 6.3V	1
C75	ECRF1H104ZF	0.1μF	1
C77	ECUV1H102JX	0.001μF	1
C78	ECUV1H101JG	100pF	1
C80	ECUV1H103KBG	0.01μF	1
C82	ECUV1C224KBX	0.22μF	1
C83	ECA1CM101	100μF, 16V	1
C84~87, 89, 90	ECUV1H104ZFX	0.1μF	6
C101~105	ECUV1H101JG	100pF	5
C106	ECUV1H030CCN	3pF	1
C107	ECUV1H104ZFX	0.1μF	1
C108	ECUV1H030CCN	3pF	1
C109~112	ECUV1H104ZFX	0.1μF	4
C113	ECEA0JKA470	47μF, 6.3V	1
C114~125	ECUV1H104ZFX	0.1μF	12
C126, 127	ECUV1H100DCN	10pF	2
C128~133	ECUV1H104ZFX	0.1μF	6
C134, 135	ECUV1H471JG	470pF	2
C136, 137, 139, 140~143	ECUV1H104ZFX	0.1μF	7
C144, 145	ECEA1HKN010	1μF, 50V	2
C145	ECEA1HKN010	1μF, 50V	1
C146, 147	ECRF1H104ZF	0.1μF	2
C148, 149	ECUV1H221JG	220pF	2
C150~157	ECUV1H104ZFX	0.1μF	8

	Ref. No.		Part No.	Description	P/S
	C158, 159		ECEA0JKA101	100μF, 6.3V	2
	C160, 161		ECUV1H104ZFX	0.1μF	2
	C163, 164		ECUV1H681JG	680pF	2
	C170, 171		ECEA1CKA100	10μF, 16V	2
	C172		ECUV1H104ZFX	0.1μF	1
	C201		ECUV1H100DCN	10pF	1
	C202		ECUV1H104ZFX	0.1μF	1
	C203		ECUV1H100DCN	10pF	1
	C204～210		ECUV1H104ZFX	0.1μF	7
	C211		ECUV1H470JG	47pF	1
	C212		ECUV1H104ZFX	0.1μF	1
	C213		ECUV1H470JG	47pF	1
	C214, 215		ECUV1H104ZFX	0.1μF	2
	C216～218, 220～224		ECUV1H101JG	100pF	8
	C225		ECUV1H104ZFX	0.1μF	1
	C226～230		ECUV1H101JG	100pF	5
	C231		ECUV1H104ZFX	0.1μF	1
	C232		ECUV1H223KBX	0.022μF	1
	C233		ECUV1H182JX	0.0018μF	1
	C234		ECUV1H104ZFX	0.1μF	1
	C235		ECUV1H472KBG	0.0047μF	1
	C236		ECUV1H333KBX	0.033μF	1
	C237		ECUV1H104ZFX	0.1μF	1
	C238		ECUV1H333KBX	0.033μF	1
	C239, 240		ECUV1H100DCN	10pF	2
	C241		ECA0JM221	220μF, 6.3V	1
	C242		ECUV1H103KBG	0.01μF	1

AS AMP & POWER SUPPLY CIRCUIT

	Ref. No.		Part No.	Description	P/S
	INTEGRATED CIRCUITS				
	IC1～8		M5218AL	OPERATIONAL AMPLIFIER	8
	IC9		SVIGM5238L	OPERATIONAL AMPLIFIER	1
	TRANSISTORS				
S	Q1		2SC1815GR	TRANSISTOR	1
	Q2		2SD2374A-P	TRANSISTOR	1
S	Q3		2SA1015-GR	2SA933STRS (SUB. PART)	1
	Q4		2SB1548A-P	TRANSISTOR	1
S	Q9		2SC1815GR	TRANSISTOR	1
S	Q10, 11		2SA1015-GR	2SA933STRS (SUB. PART)	2
	Q12		2SD592ARS	TRANSISTOR	1
	Q13		2SB621ARS	TRANSISTOR	1
	Q14		2SD592ARS	TRANSISTOR	1
	Q15		2SB621ARS	TRANSISTOR	1
	Q16	⚠	FX30KMJ-3	FET	1
	Q17	⚠	FS30KMJ-3	FET	1
	Q18	⚠	FX30KMJ-3	FET	1
	Q19	⚠	FS30KMJ-3	FET	1
S	Q20～24		2SC1815GR	TRANSISTOR	5
S	Q25		2SA1015-GR	2SA933STRS (SUB. PART)	1
S	Q26～28		2SC1815GR	TRANSISTOR	3
S	Q29		2SA1015-GR	2SA933STRS (SUB. PART)	1

	Ref. No.		Part No.	Description	P/S
	DIODES				
	D1		SVDGERA1502	RECTIFIER	1
	D2		SVDGERA1502	RECTIFIER	1
	D3～10	⚠	SVDS3V20	RECTIFIER	8
	D11		SVDGERA1502	RECTIFIER	1
	D12, 13		MA4160	ZENER, 16.0V	2
	D14, 15		MA4180	ZENER, 18V	2
	D20		EK04	DIODE	1
	D21		MA165	DIODE	1
	D22		EK04	DIODE	1
	D23, 24		MA165	DIODE	2
	D25, 26		MA4240M	DIODE	2
	COILS				
	L1～4		QLBG005A	COIL	4
	L5		QLQGT3T131TA	130μH×3	1
	L6		QLQGT1B800MA	80μH	1
	L7, 8		QLQGT1D600MA	60μH	2
	IC PROTECTOR				
	IP3, 4	⚠	ICP-N75T104	IC PROTECTOR	2
	IP5, 6	⚠	ICP-N10T104	IC PROTECTOR	2
	IP7, 8	⚠	ICP-N75T104	IC PROTECTOR	2
	VARIABLE RESISTORS				
	VR1		QRNG0681C102	1kΩ	1
	WIRE				
	W1		QEXGRA01010J	WIRE	1
	RESISTORS				
	R1, 2		ERDS2TJ103	10kΩ	2
	R3		ERDS2TJ332	3.3kΩ	1
	R4		ERDS2TJ152	1.5kΩ	1
	R5, 6, 9		ERDS2TJ103	10kΩ	3
	R10		ERDS2TJ473	47kΩ	1
	R11		ERDS2TJ103	10kΩ	1
	R12		ERDS2TJ332	3.3kΩ	1
	R13		ERDS2TJ334	330kΩ	1
	R14		ERDS2TJ104	100kΩ	1
	R15		ERDS2TJ224	220kΩ	1
	R16		ERDS2TJ334	330kΩ	1
	R18		ERDS2TJ220	22Ω	1
	R19		ERDS2TJ222	2.2kΩ	1
	R20	⚠	ERD2FCVJ4R7	4.7Ω, 1/4W, FUSE TYPE	1
	R21	⚠	ERD2FCVG220	22Ω, 1/4W, FUSE TYPE	1
	R22		ERDS2TJ224	220kΩ	1
	R23		ERDS2TJ334	330kΩ	1
	R24		ERDS2TJ220	22Ω	1
	R25		ERDS2TJ222	2.2kΩ	1
	R26	⚠	ERD2FCVJ4R7	4.7Ω, 1/4W, FUSE TYPE	1
	R27	⚠	ERD2FCVG220	22Ω, 1/4W, FUSE TYPE	1
	R28, 29	⚠	ERQ2CJP2R0S	2Ω, 2W, FUSE TYPE	2
	R30		ERDS2TJ682	6.8kΩ	1
	R31		ERDS2TJ152	1.5kΩ	1
	R32		ERDS2TJ154	150kΩ	1
	R33		ERDS2TJ122	1.2kΩ	1
	R34		ERDS2TJ224	220kΩ	1

	Ref. No.		Part No.	Description	P/S
	R35		ERDS2TJ821	820Ω	1
	R36		ERDS2TJ393	39kΩ	1
	R38		ERDS2TJ104	100kΩ	1
	R39		ERDS2TJ152	1.5kΩ	1
	R40		ERDS2TJ563	56kΩ	1
	R41		ERDS2TJ681	680Ω	1
	R42		ERDS2TJ683	68kΩ	1
	R43		ERDS2TJ682	6.8kΩ	1
	R44		ERDS2TJ152	1.5kΩ	1
	R45		ERDS2TJ154	150kΩ	1
	R46		ERDS2TJ122	1.2kΩ	1
	R47		ERDS2TJ224	220kΩ	1
	R48		ERDS2TJ821	820Ω	1
	R49		ERDS2TJ393	39kΩ	1
	R51		ERDS2TJ104	100kΩ	1
	R52		ERDS2TJ152	1.5kΩ	1
	R53		ERDS2TJ563	56kΩ	1
	R54		ERDS2TJ681	680Ω	1
	R55		ERDS2TJ683	68kΩ	1
	R56		ERDS2TJ393	39kΩ	1
	R57		ERDS2TJ564	560kΩ	1
	R58		ERDS2TJ222	2.2kΩ	1
	R59		ERDS2TJ393	39kΩ	1
	R60		ERDS2TJ104	100kΩ	1
	R61		ERDS2TJ105	1MΩ	1
	R62		ERDS2TJ152	1.5kΩ	1
	R65		ERDS2TJ393	39kΩ	1
	R66		ERDS2TJ564	560kΩ	1
	R67		ERDS2TJ222	2.2kΩ	1
	R68		ERDS2TJ393	39kΩ	1
	R69		ERDS2TJ104	100kΩ	1
	R70		ERDS2TJ105	1MΩ	1
	R71		ERDS2TJ222	2.2kΩ	1
	R74, 75	⚠	ERF5TJ100	10Ω, 5W, FLAME-PROOF	2
	R78, 79	⚠	ERF2EXKR10V	0.1Ω, 2W, FLAME-PROOF	2
	R80		ERDS2TJ223	22kΩ	1
	R81		ERDS2TJ472	4.7kΩ	1
	R82		ERDS2TJ333	33kΩ	1
	R83		ERDS2TJ223	22kΩ	1
	R84		ERDS2TJ472	4.7kΩ	1
	R85		ERDS2TJ333	33kΩ	1
	R86		ERDS2TJ103	10kΩ	1
	R87, 89		ERDS2TJ104	100kΩ	2
	R90		ERDS2TJ103	10kΩ	1
	R91		ERDS2TJ472	4.7kΩ	1
	R92		ERDS2TJ103	10kΩ	1
	R93		ERDS2TJ472	4.7kΩ	1
	R94		ERDS2TJ473	47kΩ	1
	R95		ERDS2TJ332	3.3kΩ	1
	R96		ERDS2TJ103	10kΩ	1
	R97, 98	⚠	ERQ2CJP6R8S	6.8Ω, 2W, FUSE TYPE	2
	R101, 102		ERDS2TJ682	6.8kΩ	2
	CAPACITORS				
	C1	⚠	ECQE1A104M6	0.1μF, 125V	1
○	C2, 3		ECOS1JP103EB	100000μF, 63V	2
○	C4, 5		ECQV1J105JM	1μF	2
	C6		ECEA1HKA010	1μF, 50V	1
	C7		ECA1CM101	100μF, 16V	1
	C8		ECEA1HKA010	1μF, 50V	1
	C9		ECA1CM101	100μF, 16V	1
	C11		ECEA1CKA100	10μF, 16V	1
	C13		ECA1CM101	100μF, 16V	1
	C14, 15		ECCR1H100D	10pF	2
	C16		QCBG1H104ZFA	0.1μF	1
	C17		ECQG1H472KZ	0.0047μF	1

	Ref. No.	Part No.	Description	P/S
	C18	ECQB1H153JF	0.015μF	1
	C19	ECQG1H152KZ	0.0015μF	1
	C20	ECQB1H473JF	0.047μF	1
	C21	ECQG1H222KZ	0.0022μF	1
	C22	ECQV1H154JM	0.15μF	1
	C23	ECQB1H333JF	0.033μF	1
	C26	ECQV1H474JM	0.47μF	1
	C27	ECQB1H473JF	0.047μF	1
	C28	ECEA1HKN2R2	2.2μF, 50V	1
	C29	ECQV1H334JM	0.33μF	1
	C30	ECQG1H472KZ	0.0047μF	1
	C31	ECQB1H153JF	0.015μF	1
	C32	ECQG1H152KZ	0.0015μF	1
	C33	ECQB1H473JF	0.047μF	1
	C34	ECQG1H222KZ	0.0022μF	1
	C35	ECQV1H154JM	0.15μF	1
	C36	ECQB1H333JF	0.033μF	1
	C39	ECQV1H474JM	0.47μF	1
	C40	ECQB1H473JF	0.047μF	1
	C41	ECEA1HKN2R2	2.2μF, 50V	1
	C42	ECQV1H334JM	0.33μF	1
	C43	ECCR1H220J	22pF	1
	C44	ECCR1H471J	470pF	1
	C46	ECQG1H332KZ	0.0033μF	1
	C47	ECCR1H220J	22pF	1
	C48	ECCR1H471J	470pF	1
	C50	ECQG1H332KZ	0.0033μF	1
○	C51, 52	ECA1JHG221B	220μF, 63V	2
○	C53, 54, 57, 58	ECQV1J105JM	1μF	4
	C59, 60	ECEA50Y1R5K	1.5μF, 50V	2
	C61, 62	ECEA50Y47	47μF, 50V	2
	C63	QCBG1H104ZFA	0.1μF	1
	C64	QCBG1H104ZFA	0.1μF	1
	C65, 66	ECEA1HKN010	1μF, 50V	2
	C67	ECQG1H472KZ	0.0047μF	1

ASUB ASUB CIRCUIT

	Ref. No.	Part No.	Description	P/S
	TRANSISTORS			
S	Q101	2SA1015-GR	2SA933STRS (SUB. PART)	1
S	Q102	2SC1815GR	TRANSISTOR	1
S	Q103, 104	2SA1015-GR	2SA933STRS (SUB. PART)	2
	Q105	2SA970GTPE2	TRANSISTOR	1
	Q106	2SC2240GTPE2	TRANSISTOR	1
S	Q107	2SC1815GR	TRANSISTOR	1
S	Q108	2SA1015-GR	2SA933STRS (SUB. PART)	1
○	Q109	2SA1285FTA	TRANSISTOR	1
○	Q110	2SC3245FTA	TRANSISTOR	1
S	Q111	2SA1015-GR	2SA933STRS (SUB. PART)	1
S	Q112	2SC1815GR	TRANSISTOR	1
S	Q113, 114	2SA1015-GR	2SA933STRS (SUB. PART)	2
	Q115	2SA970GTPE2	TRANSISTOR	1
	Q116	2SC2240GTPE2	TRANSISTOR	1
S	Q117	2SC1815GR	TRANSISTOR	1
S	Q118	2SA1015-GR	2SA933STRS (SUB. PART)	1
○	Q119	2SA1285FTA	TRANSISTOR	1
○	Q120	2SC3245FTA	TRANSISTOR	1
S	Q121	2SC1815GR	TRANSISTOR	1
S	Q122	2SA1015-GR	2SA933STRS (SUB. PART)	1
S	Q123	2SC1815GR	TRANSISTOR	1
S	Q124	2SA1015-GR	2SA933STRS (SUB. PART)	1

CPL CONTROL PANEL LEFT CIRCUIT

Ref. No.	Part No.	Description	P/S
DIODES			
D101, 102, 107, 108	MA165	DIODE	4
RESISTORS			
R101 ⚠	ERD2FCVG221T	220Ω, 1/4W, FUSE TYPE	1
R102, 103	ERDS2TJ152	1.5kΩ	2
R104	ERDS2TJ472	4.7kΩ	1
R105, 106 ⚠	ERD2FCVG221T	220Ω, 1/4W, FUSE TYPE	2
R107, 108 ⚠	ERD2FCVG471T	470Ω, 1/4W, FUSE TYPE	2
R109, 110	ERDS2TJ103	10kΩ	2
R113 ⚠	ERD2FCVG221T	220Ω, 1/4W, FUSE TYPE	1
R114	ERDS2TJ152	1.5kΩ	1
R115	ERDS2TJ152	1.5kΩ	1
R116	ERDS2TJ472	4.7kΩ	1
R117, 118 ⚠	ERD2FCVG221T	220Ω, 1/4W, FUSE TYPE	2
R119, 120 ⚠	ERD2FCVG471T	470Ω, 1/4W, FUSE TYPE	2
R121, 122	ERDS2TJ103	10kΩ	2
CAPACITORS			
C101	ECBA1H151KB	150pF	1
C102, 103	ECBA1H681KB5	680pF	2
C104	ECBA1H151KB	150pF	1
C105, 106	ECBA1H681KB5	680pF	2

Ref. No.	Part No.	Description	P/S
INTEGRATED CIRCUITS			
IC1	M37471M2196S	8 BIT MICROCOMPUTER	1
IC2, 3	HD74LS07P	HEX BUFFERS	2
TRANSISTORS			
Q1~5	2SA830SB	TRANSISTOR	5
DIODES			
D1~61	MA165	DIODE	61
D62-64, 68, 69, 71~84, 86, 87, 90, 94~99	LN282R	LED (RED)	28
D65~67, 70, 85, 88, 89, 91~93, 100, 101	LN382G	LED (GREEN)	12
OSCILLATOR			
X1	EF0EC4004A3	4MHz, CERAMIC OSCILLATOR	1
SWITCHES			
S1~61	EVQ21507K	PUSH SWITCH	61
S62	QSRGT002AA	ENCODER SWITCH	1
VARIABLE RESISTORS			
VR1	QRVG25N01B53	5KΩ B, APC/SEQUENCER VOLUME	1
VR2	QRVG25P01B53	5KΩ B, MAIN VOLUME	1
RESISTORS			
R1, 2	ERDS2T0	0Ω, 1/4W	2
R3	ERDS2TJ101	100Ω	1
R4	ERDS2TJ471	470Ω	1
R5, 6	ERDS2TJ221	220Ω	2
R7	ERDS2TJ471	470Ω	1
R8~11	ERDS2TJ472	4.7kΩ	4
R12, 13	ERDS2TJ473	47kΩ	2
R14	ERDS2TJ104	100kΩ	1
R16~28	ERDS2TJ103	10kΩ	13
R29~37	ERDS2TJ101	100Ω	9
R38	ERDS2TJ333	33kΩ	1
CAPACITORS			
C1	ECEA0JKA221	220μF, 6.3V	1
C2	ECBA1C222MR	0.0022μF	1
C3	ECEA0JKS101	100μF, 6.3V	1
C4	ECEA0JKA331	330μF, 6.3V	1
C5, 6	ECBA1H102KB	0.001μF	2
C7~10	QCBG1H104ZFA	0.1μF	4

ACP AC POWER SUPPLY CIRCUIT

Ref. No.	Part No.	Description	P/S
SWITCH			
S1 ⚠	SSRG100A	VOLTAGE SELECTOR, X XS XD XT	1
FUSES			
F1 ⚠	XBA2C40TB0	T4A, 250V, X XS XD XT	1
F1 ⚠	XBA1C63NU100	6.3A, 125V, M MC XM	1
F2 ⚠	XBA2C20TB0	T2A, 250V, X XS XD XT	1
F3 ⚠	XBA2C20TB0	T2A, 250V, EN EZ EW EF EA EH EP EK XL XR XP XW X XS XD XT	1
CAPACITORS			
C1 ⚠	ECKCVA1472MF	4700pF, LINE CAPACITOR	1
C2 ⚠	ECQU2A104MN	0.1μF, 250V, ACROSS-THE LINE CAPACITOR	1

CPR CONTROL PANEL RIGHT CIRCUIT

Ref. No.	Part No.	Description	P/S
INTEGRATED CIRCUITS			
IC1	M37471M2196S	8 BIT MICROCOMPUTER	1
IC2, 3	HD74LS07P	HEX BUFFERS	2
TRANSISTORS			
Q1~5	2SA830SB	TRANSISTOR	5
DIODES			
D1~70	MA165	DIODE	70
D71~81, 83~87, 94~105, 115~121	LN282R	LED (RED)	35
D82, 88, 89, 91, 93, 106~114	LN382G	LED (GREEN)	14
OSCILLATOR			
X1	EF0EC4004A3	4MHz, CERAMIC OSCILLATOR	1
SWITCHES			
S1~5, 7~70	EVQ21507K	PUSH SWITCH	69
RESISTORS			
R1, 2	ERDS2T0	0Ω, 1/4W	2
R4	ERDS2TJ471	470Ω	1
R5, 6	ERDS2TJ221	220Ω	2
R7	ERDS2TJ471	470Ω	1
R8, 9	ERDS2TJ103	10kΩ	2
R10	ERDS2TJ333	33kΩ	1
R16~28	ERDS2TJ103	10kΩ	13
R29~40	ERDS2TJ101	100Ω	12
CAPACITORS			
C1	QCBG1H104ZFA	0.1μF	1
C2	ECBA1C222MR	0.0022μF	1
C4	ECEA0JKA331	330μF, 6.3V	1
C9, 10	QCBG1H104ZFA	0.1μF	2

JACK2 JACK 2 CIRCUIT

Ref. No.	Part No.	Description	P/S
INTEGRATED CIRCUITS			
IC1	M5218AL	OPERATIONAL AMPLIFIER	1
TRANSISTOR			
S Q1	2SC1815GR	TRANSISTOR	1

Ref. No.	Part No.	Description	P/S
DIODES			
D1	MA165	DIODE	1
D2	SEL4214RLC05	LED, POWER INDICATOR	1
COILS			
L1, 2	QLQGT3T131TA	130μH×3	2
JACKS			
JK1	QJJG010AA	HEADPHONE1	1
JK2	QJJG010AA	HEADPHONE2	1
JK3	QJJG011AA	MIC	1
VARIABLE RESISTOR			
VR1	QRVG09A02B54	50K, MIC VOLUME	1
RESISTORS			
R1~4 ⚠	ERG1SJ470	47Ω, 1W, FLAME-PROOF	4
R5	ERDS2TJ104	100kΩ	1
R6	ERDS2TJ472	4.7kΩ	1
R7	ERDS2TJ222	2.2kΩ	1
R8	ERDS2TJ104	100kΩ	1
R9	ERDS2TJ223	22kΩ	1
R10	ERDS2TJ683	68kΩ	1
R11	ERDS2TJ222	2.2kΩ	1
R12	ERDS2TJ152	1.5kΩ	1
R13	ERDS2TJ222	2.2kΩ	1
CAPACITORS			
C1, 2	QCBG1H473ZFA	0.047μF	2
C3	QCBG1H104ZFA	0.1μF	1
C4	ECEA1HKN010	1μF, 50V	1
C5	ECBT1H470J5	47pF	1
C6	QCBG1H104ZFA	0.1μF	1
C7	ECEA1HKN010	1μF, 50V	1
C8	ECEA0JKA470	47μF, 6.3V	1
C9	ECBA1C682MR5	0.0068μF	1
C10	QCBG1H104ZFA	0.1μF	1
C11	ECEA1HKN010	1μF, 50V	1

INVR INVERTER R CIRCUIT

Ref. No.	Part No.	Description	P/S
TRANSISTORS			
Q1, 2	2SD592ARS	TRANSISTOR	2
TRANSFORMER			
T1 ⚠	QTDG003A	TRANSFORMER	1
COIL			
L1	QLQGT1B101KA	100μH	1

	Ref. No.	Part No.	Description	P/S
	RESISTORS			
	R1, 2	ERDS2TJ222	2.2kΩ	2
	CAPACITORS			
	C1	ECEA0JKA221	220μF, 6.3V	1
	C2	ECQB1H473JF	0.047μF	1
S	C3	ECCD3F180JGE	18pF	1
	C4	ECEA0JKA221	220μF, 6.3V	1

JACK JACK CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUITS			
	IC1	SVIGTLP513	PHOTO COUPLER	1
	TRANSISTORS			
S	Q1, 2	2SA1015-GR	2SA933STRS (SUB. PART)	2
	DIODES			
	D1～5	MA165	DIODE	5
	COILS			
	L5～9	QLQGT3T131TA	130μH×3	5
	L10	QLQGT1B100MA	10μH	1
	L14	QLQGT1B800MA	80μH	1
	L21	QLBG005A	COIL	1
	JACKS			
	JK1	QJSG007AA	PEDAL IN	1
	JK2	QJSG018AA	COMPUTER	1
	JK3	QJSG016AA	MIDI IN	1
	JK4	QJSG016AA	MIDI OUT	1
	JK5	QJSG016AA	MIDI THRU	1
	JK6	QJJG003AA	AUX IN L	1
	JK7	QJJG003AA	AUX IN R	1
	JK8	QJJG003AA	LINEOUT R	1
	JK9	QJJG003AA	LINEOUT L	1
	SWITCH			
	S1	QSSGT011AA	SLIDE SWITCH	1
	WIRES			
	W1～3	QEXGRA01005A	WIRE	3
	RESISTORS			
	R1, 2	ERDS2TJ680	68Ω	2
	R3	ERDS2TJ151	150Ω	1
	R4	ERDS2TJ330	33Ω	1
	R5	ERDS2TJ221	220Ω	1

	Ref. No.	Part No.	Description	P/S
	R6	ERDS2TJ331	330Ω	1
	R7, 8	ERDS2TJ681	680Ω	2
	R10, 11, 13, 14	ERDS2TJ471	470Ω	4
	R15～17	ERDS2TJ102	1kΩ	3
	CAPACITORS			
	C1	QCBG1H104ZFA	0.1μF	1
	C2, 3	ECCR1H221J	220pF	2
	C4, 5	QCBG1H104ZFA	0.1μF	2
	C6, 7, 10, 11	ECBA1C222MR	0.0022μF	4
	C8, 9	QCBG1H104ZFA	0.1μF	2

MKB1 MANUAL KEYBOARD 1 CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUITS			
	IC1	ST93C46CB1	1M BIT PROGRAMMED EEPROM	1
	IC2	HD74LS138P	3TO8 DECODER	1
	DIODES			
	D1～88	MA165	DIODE	88
	CAPACITORS			
	C1	ECRF1H104ZF	0.1μF	1
	C2	ECEA0JKA470	47μF, 6.3V	1
	C3, 4	ECRF1H104ZF	0.1μF	2

MKB2 MANUAL KEYBOARD 2 CIRCUIT

	Ref. No.	Part No.	Description	P/S
	INTEGRATED CIRCUITS			
	IC3, 4	HD74LS138P	3TO8 DECODER	2
	DIODES			
	D89～176	MA165	DIODE	88
	CAPACITORS			
	C5, 6	ECRF1H104ZF	0.1μF	2

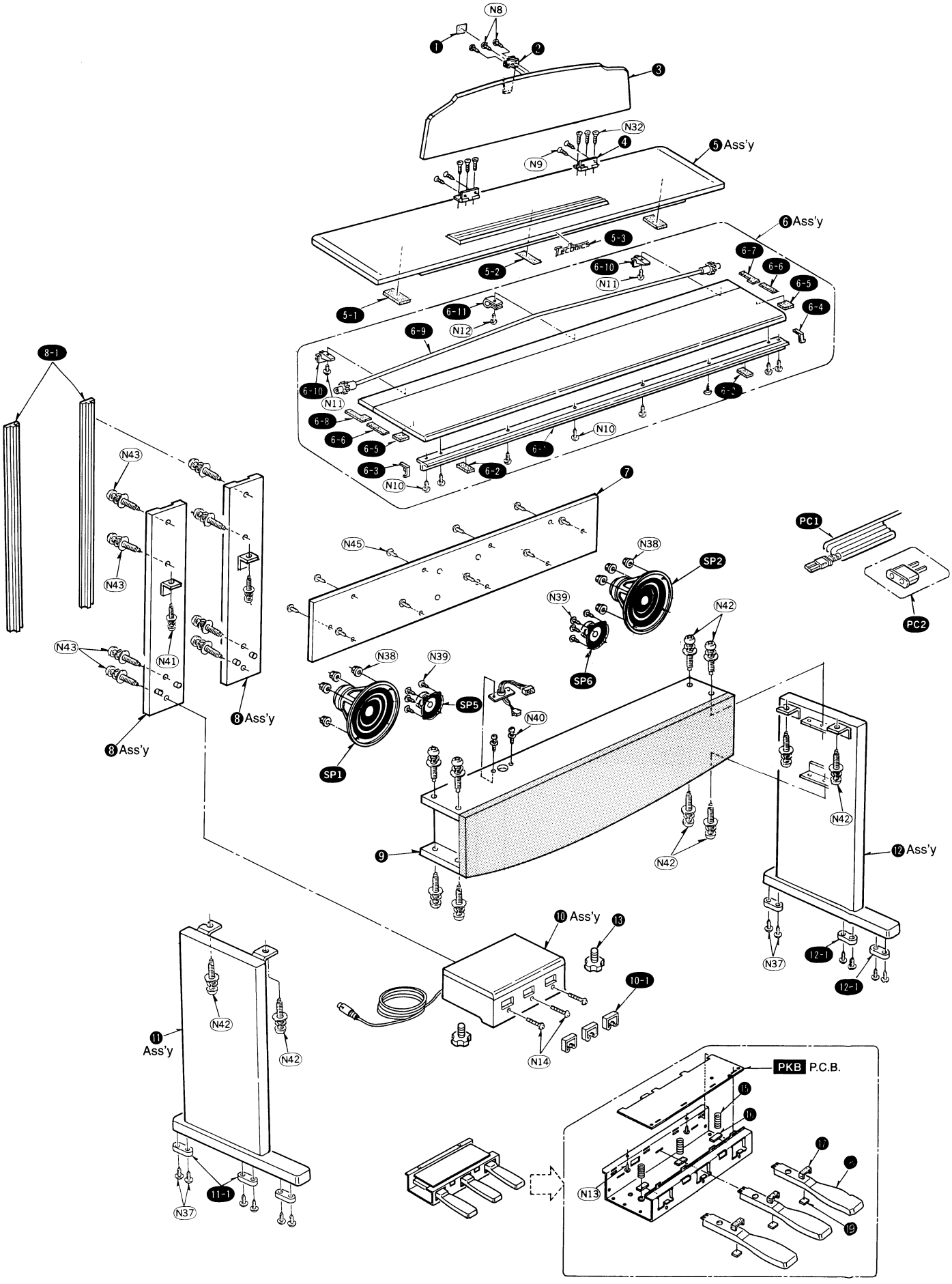
PKB PEDAL KEYBOARD CIRCUIT

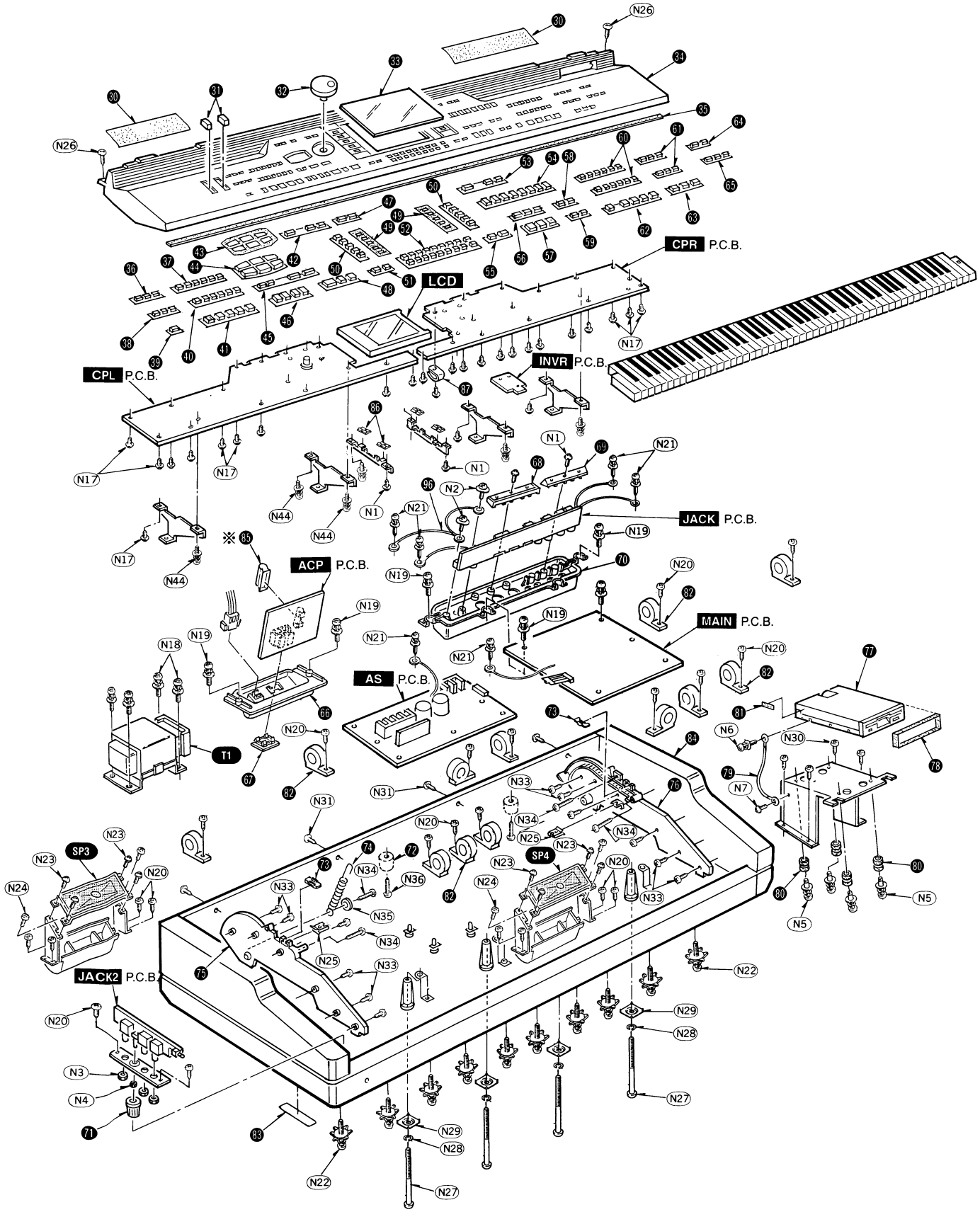
	Ref. No.	Part No.	Description	P/S
		TRANSISTORS		
S	Q1, 2	2SC1815GR	TRANSISTOR	2
S	Q3	2SA1015-GR	2SA933STRS (SUB. PART)	1
		DIODE		
	D1	GP2S24BC	PHOTO INTERRUPTER	1
		SWITCHES		
	S1, 2	QSTGT001AA	LEVER SWITCH	2
		VARIABLE RESISTOR		
	VR1	EVND8AA03B52	500Ω	1
		RESISTORS		
	JR1~3	ERDS2T0	0Ω, 1/4W	3
	R1	ERDS2TJ181	180Ω	1
	R2	ERDS2TJ224	220kΩ	1
	R3	ERDS2TJ333	33kΩ	1
	R4	ERDS2TJ683	68kΩ	1
	R5	ERDS2TJ124	120kΩ	1
	R6	ERDS2TJ224	220kΩ	1
	R7	ERDS2TJ124	120kΩ	1
	R8~10	ERDS2TJ472	4.7kΩ	3
	R11	ERDS2T0	0Ω, 1/4W	1
	R12	ERDS2TJ391	390Ω	1
	R13	ERTD2ZGK102	1kΩ	1
	R14	ERDS2TJ222	2.2kΩ	1
		CAPACITORS		
	C1, 2	ECRF1H104ZF	0.1μF	2
	C3	ECQB1H153JF	0.015μF	1

■WIRING PARTS

	Ref. No.	Part No.	Description	P/S
	W1	QEXGEL06020B	CONNECTOR WITH WIRE	1
	W2	QEXGVH06028B	CONNECTOR WITH WIRE	1
	W3	QEXGVH03140B	CONNECTOR WITH WIRE	1
	W4	QEXGVH04095C	CONNECTOR WITH WIRE	1
	W5	QEXGSS06055A	CONNECTOR WITH WIRE	1
	W6	QEXGSS05095B	CONNECTOR WITH WIRE	1
	W7	QEXGSS16100A	CONNECTOR WITH WIRE	1
	W8	QEXGSS04100A	CONNECTOR WITH WIRE	1
	W9	QEXGSS05045B	CONNECTOR WITH WIRE	1
	W10	QEXGSS10025A	CONNECTOR WITH WIRE	1
	W11	QEXGSS07025A	CONNECTOR WITH WIRE	1
	W12	QEXGSS05025A	CONNECTOR WITH WIRE	1
	W13	QEXGZA34075B	CONNECTOR WITH WIRE	1
○	W14	QEXGZA15057B	CONNECTOR WITH WIRE	1
	W15	QEXGZA05078B	CONNECTOR WITH WIRE	1
	W16	QEXGSS04010A	CONNECTOR WITH WIRE	1
	W17	QEUGKCH06BB	FLAT CABLE	1
	W18	QEUGK8H07BB	FLAT CABLE	1
	W19	QJLG013AA	PEDAL CORD	1
○	W20	QEXGEL06085E	CONNECTOR WITH WIRE	1

■CABINET PARTS LOCATION




CPR P.C.B.
LCD
CPL P.C.B.
INVR P.C.B.
JACK P.C.B.
ACP P.C.B.
MAIN P.C.B.
AS P.C.B.
SP3
SP4
JACK2 P.C.B.
T1

REPLACEMENT PARTS LIST.....Cabinet and Chassis Parts

Notes:

1. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retension period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention.
   After the end of this period, the assembly will no longer be available.
2. ○ mark are new parts.
   Cabinet Colour
   • SX-PR902C.....Cherry • SX-PR902R.....Rose Wood
3. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
4. For part No. with area mark, check the area when placing an order.
5. The raw material indication for synthetic resin
   In order to facilitate classification of parts of synthetic resin manufacture and to promote the recycling of natural resources, a raw material symbol for such parts is indicated in the Ref. No./ Material column.
6. The marking (※) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production; the item will continue to be available for a specific period of time.

SX-PR902C CABINET & CHASSIS PARTS

	Ref. No.		Part No.	Description	P/S
			SPEAKERS		
○	SP1, 2		EAST20PL02A6	20cm, 6Ω	2
	SP3, 4		EAS15S09A	13×6cm 8Ω	2
	SP5, 6		EAS65PH31A3	6.5cm, 8Ω	2
			TRANSFORMER		
○	T1	⚠	QTPG1N025A	POWER TRANSFORMER, EN EK EZ EW EF EA EP EH X XL XR XS XT XD XP XW	1
○	T1	⚠	QTPG1N026A	POWER TRANSFORMER, M MC XM	1
			POWER CORD & PLUG		
	PC1	⚠	QJAG027AA	POWER CORD, EN EZ EW EF EA EP EH X XS XT XP XW	1
	PC1	⚠	QJAG025AA	POWER CORD, M MC XM	1
	PC1	⚠	QJAG028AA	POWER CORD, EK XD	1
	PC1	⚠	QJAG029AA	POWER CORD, XL XR	1
	PC2	⚠	SJP5213-1	ATTACHMENT PLUG, X XT XP	1
			CABINET PARTS		
	1		QMFG1083AB	FELT	1
	2		SBLG7-2	STAY	1
○	3		QKQGN899AB	MUSIC STAND	1
	4		SBHG5003-2	HINGE	2
○	5		QKQGA134AA	TOP COVER ASS'Y	1
	5-1		QMFG1221AA	FELT	2
	5-2		QMFG1222AA	FELT	1
	5-3		SGBG160B	BADGE	1
○	6		QKQGF035AB	KEYBOARD COVER ASS'Y	1
	6-1		QGKG0095AB	ORNAMENT	1
	6-2		QMFG1258AA	FELT	2
	6-3		QMRG7031DC	PROTECTOR	1
	6-4		QMRG7032DC	PROTECTOR	1
	6-5		QMFG1259AA	FELT	2
	6-6		QMFG1260AA	FELT	2
	6-7		QMFG1262AA	FELT	1
	6-8		QMFG1261AA	FELT	1
	6-9		QXQG007AA	AXLETREE	1

SX-PR902R CABINET & CHASSIS PARTS

	Ref. No.		Part No.	Description	P/S
			SPEAKERS		
○	SP1, 2		EAST20PL02A6	20cm, 6Ω	2
	SP3, 4		EAS15S09A	13×6cm 8Ω	2
	SP5, 6		EAS65PH31A3	6.5cm, 8Ω	2
			TRANSFORMER		
○	T1	⚠	QTPG1N025A	POWER TRANSFORMER, EN EK EZ EW EF EA EP EH X XL XR XS XT XD XP XW	1
○	T1	⚠	QTPG1N026A	POWER TRANSFORMER, M MC XM	1
			POWER CORD & PLUG		
	PC1	⚠	QJAG027AA	POWER CORD, EN EZ EW EF EA EP EH X XS XT XP XW	1
	PC1	⚠	QJAG025AA	POWER CORD, M MC XM	1
	PC1	⚠	QJAG028AA	POWER CORD, EK XD	1
	PC1	⚠	QJAG029AA	POWER CORD, XL XR	1
	PC2	⚠	SJP5213-1	ATTACHMENT PLUG, X XT XP	1
			CABINET PARTS		
	1		QMFG1083AB	FELT	1
	2		SBLG7-2	STAY	1
○	3		QKQGN899AA	MUSIC STAND	1
	4		SBHG5003-2	HINGE	2
○	5		QKQGA133AA	TOP COVER ASS'Y	1
	5-1		QMFG1221AA	FELT	2
	5-2		QMFG1222AA	FELT	1
	5-3		SGBG160B	BADGE	1
○	6		QKQGF035AA	KEYBOARD COVER ASS'Y	1
	6-1		QGKG0095AA	ORNAMENT	1
	6-2		QMFG1258AA	FELT	2
	6-3		QMRG7031DC	PROTECTOR	1
	6-4		QMRG7032DC	PROTECTOR	1
	6-5		QMFG1259AA	FELT	2
	6-6		QMFG1260AA	FELT	2
	6-7		QMFG1262AA	FELT	1
	6-8		QMFG1261AA	FELT	1
	6-9		QXQG007AA	AXLETREE	1

SX-PR902C

Ref. No.		Part No.	Description	P/S
6-10		QMRG7056AA	HOLDER	2
6-11		QWBG002AA	HOLDER	1
○ 7		QKUG1048AB	SPEAKER BOX REAR BOARD	1
○ 8		QKQGZ157AB	REAR PLANK ASS'Y	2
○ 8-1		QGKG0130AG	CORD COVER	2
○ 9		QYKG242ABK	SPEAKER BOX	1
○ 10		QKQGM095AB	PEDAL BOX ASS'Y	1
10-1	ABS	QGKG0113AA	ORNAMENT	3
○ 11		QKQGB499AA	LEFT PLANK ASS'Y	1
11-1	PP	SHRG2130B-K	FOOT	3
○ 12		QKQGB500AA	RIGHT PLANK ASS'Y	1
12-1	PP	SHRG2130B-K	FOOT	3
13		QKAG0008AA	THUMB SCREW	2
15		QMBG009AA	SPRING	3
16		QMFG1133AA	FELT	3
17		QMFG1134AA	FELT	3
18		QMWG4002AA	PEDAL ARM	3
19		QMFG1135AA	FELT	3
30		QMFG4222AA	CUSHION	2
31		SBNG7050A	KNOB	2
32	ABS	QGUG3002BB	DIAL WHEEL	1
○ 33		QKWG033AA	LCD PANEL	1
○ 34	PS	QGPG0133AB	CONTROL PANEL	1
35		QMFG1140AA	FELT	1
36		QGUG1202BB	BUTTON	1
37		QGUG1205BB	BUTTON	1
38		QGUG1201CB	BUTTON	1
39		QGUG1204CB	BUTTON	1
40		QGUG1207BB	BUTTON	1
41		QGUG1463AA	BUTTON	1
42		QGUG1202CB	BUTTON	1
43		QMFG4215AA	CUSHION	1
44		QGUG1440AB1K	BUTTON	1
45		QGUG1462AA	BUTTON	1
46		QGUG1461AA	BUTTON	1
47		QGUG1468AA	BUTTON	1
48		QGUG1465AA	BUTTON	1
○ 49		QMFG4226AA	CUSHION	2
50		QGUG1471AA	BUTTON	2
51		QGUG1466AA	BUTTON	1
52		QGUG1459AA	BUTTON	1
53		QGUG1201BB	BUTTON	1
54		QGUG1460AA	BUTTON	1
55		QGUG1467AA	BUTTON	1
56		QGUG1204BB	BUTTON	1
57		QGUG1216AB	BUTTON	1
58		QGUG1203BB	BUTTON	1
59		QGUG1203BB	BUTTON	1
60		QGUG1206BB	BUTTON	2
61		QGUG1203CB	BUTTON	2
62		QGUG1464AA	BUTTON	1
63		QGUG1212AB	BUTTON	1
64		QGUG1203BB	BUTTON	1
65		QGUG1203DB	BUTTON	1
66		QGKG0096AD	AC JACK PANEL, EN M MC EK EZ EW EF EA EP EH XL XR XP XM XW	1
66		QGKG0096BC	AC JACK PANEL, X XS XT XD	1
67	⚠	SJS9231A	AC INLET COVER, EN EK EZ EW EF EA EP EH X XL XR XS XT XD XP XW	1
67	⚠	SJS9334A	AC INLET COVER, M MC XM	1
68		QMRG7029AC	BRACKET	1
69		QMRG7028AC	BRACKET	1
70		QGKG0076FB	EXTERNAL JACK PANEL	1
71		SBNG4010A	VOLUME KNOB	1

SX-PR902R

Ref. No.		Part No.	Description	P/S
6-10		QMRG7056AA	HOLDER	2
6-11		QWBG002AA	HOLDER	1
○ 7		QKUG1048AA	SPEAKER BOX REAR BOARD	1
○ 8		QKQGZ157AA	REAR PLANK ASS'Y	2
○ 8-1		QGKG0130AC	CORD COVER	2
○ 9		QYKG242AAK	SPEAKER BOX	1
○ 10		QKQGM095AA	PEDAL BOX ASS'Y	1
10-1	ABS	QGKG0113AA	ORNAMENT	3
○ 11		QKQGB497AA	LEFT PLANK ASS'Y	1
11-1	PP	SHRG2130B-K	FOOT	3
○ 12		QKQGB498AA	RIGHT PLANK ASS'Y	1
12-1	PP	SHRG2130B-K	FOOT	3
13		QKAG0008AA	THUMB SCREW	2
15		QMBG009AA	SPRING	3
16		QMFG1133AA	FELT	3
17		QMFG1134AA	FELT	3
18		QMWG4002AA	PEDAL ARM	3
19		QMFG1135AA	FELT	3
30		QMFG4222AA	CUSHION	2
31		SBNG7050A	KNOB	2
32	ABS	QGUG3002BB	DIAL WHEEL	1
○ 33		QKWG033AA	LCD PANEL	1
○ 34	PS	QGPG0133AB	CONTROL PANEL	1
35		QMFG1140AA	FELT	1
36		QGUG1202BB	BUTTON	1
37		QGUG1205BB	BUTTON	1
38		QGUG1201CB	BUTTON	1
39		QGUG1204CB	BUTTON	1
40		QGUG1207BB	BUTTON	1
41		QGUG1463AA	BUTTON	1
42		QGUG1202CB	BUTTON	1
43		QMFG4215AA	CUSHION	1
44		QGUG1440AB1K	BUTTON	1
45		QGUG1462AA	BUTTON	1
46		QGUG1461AA	BUTTON	1
47		QGUG1468AA	BUTTON	1
48		QGUG1465AA	BUTTON	1
○ 49		QMFG4226AA	CUSHION	2
50		QGUG1471AA	BUTTON	2
51		QGUG1466AA	BUTTON	1
52		QGUG1459AA	BUTTON	1
53		QGUG1201BB	BUTTON	1
54		QGUG1460AA	BUTTON	1
55		QGUG1467AA	BUTTON	1
56		QGUG1204BB	BUTTON	1
57		QGUG1216AB	BUTTON	1
58		QGUG1203BB	BUTTON	1
59		QGUG1203BB	BUTTON	1
60		QGUG1206BB	BUTTON	2
61		QGUG1203CB	BUTTON	2
62		QGUG1464AA	BUTTON	1
63		QGUG1212AB	BUTTON	1
64		QGUG1203BB	BUTTON	1
65		QGUG1203DB	BUTTON	1
66		QGKG0096AD	AC JACK PANEL, EN M MC EK EZ EW EF EA EP EH XL XR XP XM XW	1
66		QGKG0096BC	AC JACK PANEL, X XS XT XD	1
67	⚠	SJS9231A	AC INLET COVER, EN EK EZ EW EF EA EP EH X XL XR XS XT XD XP XW	1
67	⚠	SJS9334A	AC INLET COVER, M MC XM	1
68		QMRG7029AC	BRACKET	1
69		QMRG7028AC	BRACKET	1
70		QGKG0076FB	EXTERNAL JACK PANEL	1
71		SBNG4010A	VOLUME KNOB	1

SX-PR902C

Ref. No.	Part No.	Description	P/S
72	QKAG0012AA	FOOT	2
73	QMRG7086AA	LID, GUIDE	2
74	QMBG023AA	SPRING	1
75 PS	QKSGG028AA	GUIDE	1
76 PS	QKSGG029AA	GUIDE	1
77	QAUG019AA	DISK DRIVE UNIT	1
78	QMFG1220AA	FELT	1
79	QEXGRA01007H	WIRE	1
80	QMGG029AA	FLOATING RUBBER	4
81	QMFG4103AA	CUSHION	1
82	QLZG017AA	CORE	12
83	QQLG174AA	HEADPHONE LABEL	1
○ 84※	QYKG239AB	CABINET ASS'Y	1
85	QMRG1027AA	FUSE COVER	1
○ 86	QMCG010AA	SPRING	4
○ 87	QMRG2080AA	CORD CLUMPER	1

SCREWS & WASHERS

N1	XTW3+10Q	SCREW	6
N2	XTWSG2	SCREW WITH WASHER	2
N3	XNS12FZ	NUT	3
N4	XNS9	NUT	1
N5	QHDG043AA	SCREW WITH WASHER	4
N6	XYN3+F6	SCREW WITH WASHER	1
N7	XTW3+8J	SCREW	1
N8	XTB3+10AFZ	SCREW	3
N9	XTS3+10AFZ	SCREW	4
N10	XTT4+10A	SCREW	8
N11	XTB4+10B	SCREW	2
N12	XTT4+12AFZ	SCREW	1
N13	XTT4+16A	SCREW	2
N14	XYN4+F16FZ	SCREW WITH WASHER	3
N17	XTW3+10Q	SCREW	37
N18	XYN4+F16	SCREW WITH WASHER	4
N19	XYN4+F25	SCREW WITH WASHER	6
N20	XTB35+10A	SCREW	22
N21	SNEG2660A	SCREW	6
N22	QHDG021AA	SCREW WITH WASHER	10
N23	XTW3+8J	SCREW	8
N24	XTB4+10C	SCREW	4
N25	QHWG007AA	NUT	2
N26	SNEG2400A	SCREW WITH WASHER	2
N27	XSN5+85	SCREW	4
N28	XWA5B	WASHER	4
N29	SNEG150A	WASHER	4
N30	XTB35+10A	SCREW	4
N31	GTT4+35AFZ	SCREW	4
N32	XTS3+12AFZ	SCREW	6
N33	XTB35+16A	SCREW	12
N34	XTN4+50AFZ	SCREW	4
N35	XWG4G16	WASHER	1
N36	XTB35+20A	SCREW	2
N37	XTW3+16J	SCREW	12
N38	SNE499-1	NUT	8
N39	XTT4+12AK	SCREW	8
N40	QHDG004AA	SCREW	2
N41	XYN4+F20FZ	SCREW WITH WASHER	2
N42	QHDG016AB	SCREW WITH WASHER	12
N43	QHDG032AB	SCREW WITH WASHER	8
N44	XYE3+FG12	SCREW WITH WASHER	5
N45	XTT4+25AFZ	SCREW	10

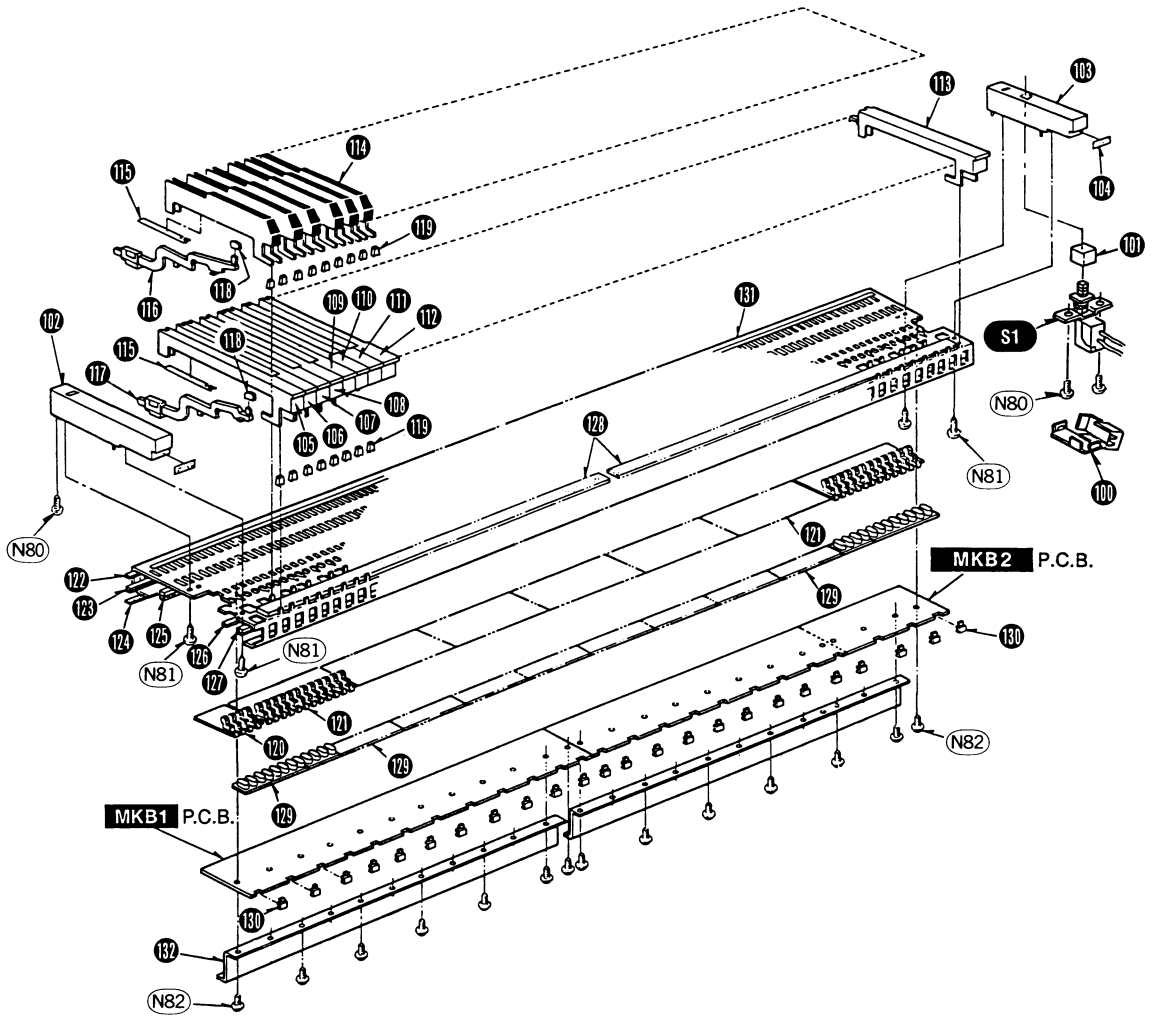
SX-PR902R

Ref. No.	Part No.	Description	P/S
72	QKAG0012AA	FOOT	2
73	QMRG7086AA	LID, GUIDE	2
74	QMBG023AA	SPRING	1
75 PS	QKSGG028AA	GUIDE	1
76 PS	QKSGG029AA	GUIDE	1
77	QAUG019AA	DISK DRIVE UNIT	1
78	QMFG1220AA	FELT	1
79	QEXGRA01007H	WIRE	1
80	QMGG029AA	FLOATING RUBBER	4
81	QMFG4103AA	CUSHION	1
82	QLZG017AA	CORE	12
83	QQLG174AA	HEADPHONE LABEL	1
○ 84※	QYKG239AA	CABINET ASS'Y	1
85	QMRG1027AA	FUSE COVER	1
○ 86	QMCG010AA	SPRING	4
○ 87	QMRG2080AA	CORD CLUMPER	1

SCREWS & WASHERS

N1	XTW3+10Q	SCREW	6
N2	XTWSG2	SCREW WITH WASHER	2
N3	XNS12FZ	NUT	3
N4	XNS9	NUT	1
N5	QHDG043AA	SCREW WITH WASHER	4
N6	XYN3+F6	SCREW WITH WASHER	1
N7	XTW3+8J	SCREW	1
N8	XTB3+10AFZ	SCREW	3
N9	XTS3+10AFZ	SCREW	4
N10	XTT4+10A	SCREW	8
N11	XTB4+10B	SCREW	2
N12	XTT4+12AFZ	SCREW	1
N13	XTT4+16A	SCREW	2
N14	XYN4+F16FZ	SCREW WITH WASHER	3
N17	XTW3+10Q	SCREW	37
N18	XYN4+F16	SCREW WITH WASHER	4
N19	XYN4+F25	SCREW WITH WASHER	6
N20	XTB35+10A	SCREW	22
N21	SNEG2660A	SCREW	6
N22	QHDG021AA	SCREW WITH WASHER	10
N23	XTW3+8J	SCREW	8
N24	XTB4+10C	SCREW	4
N25	QHWG007AA	NUT	2
N26	SNEG2400A	SCREW WITH WASHER	2
N27	XSN5+85	SCREW	4
N28	XWA5B	WASHER	4
N29	SNEG150A	WASHER	4
N30	XTB35+10A	SCREW	4
N31	GTT4+35AFZ	SCREW	4
N32	XTS3+12AFZ	SCREW	6
N33	XTB35+16A	SCREW	12
N34	XTN4+50AFZ	SCREW	4
N35	XWG4G16	WASHER	1
N36	XTB35+20A	SCREW	2
N37	XTW3+16J	SCREW	12
N38	SNE499-1	NUT	8
N39	XTT4+12AK	SCREW	8
N40	QHDG004AA	SCREW	2
N41	XYN4+F20FZ	SCREW WITH WASHER	2
N42	QHDG016AB	SCREW WITH WASHER	12
N43	QHDG032AB	SCREW WITH WASHER	8
N44	XYE3+FG12	SCREW WITH WASHER	5
N45	XTT4+25AFZ	SCREW	10

■MANUAL KEYBOARD PARTS LOCATION

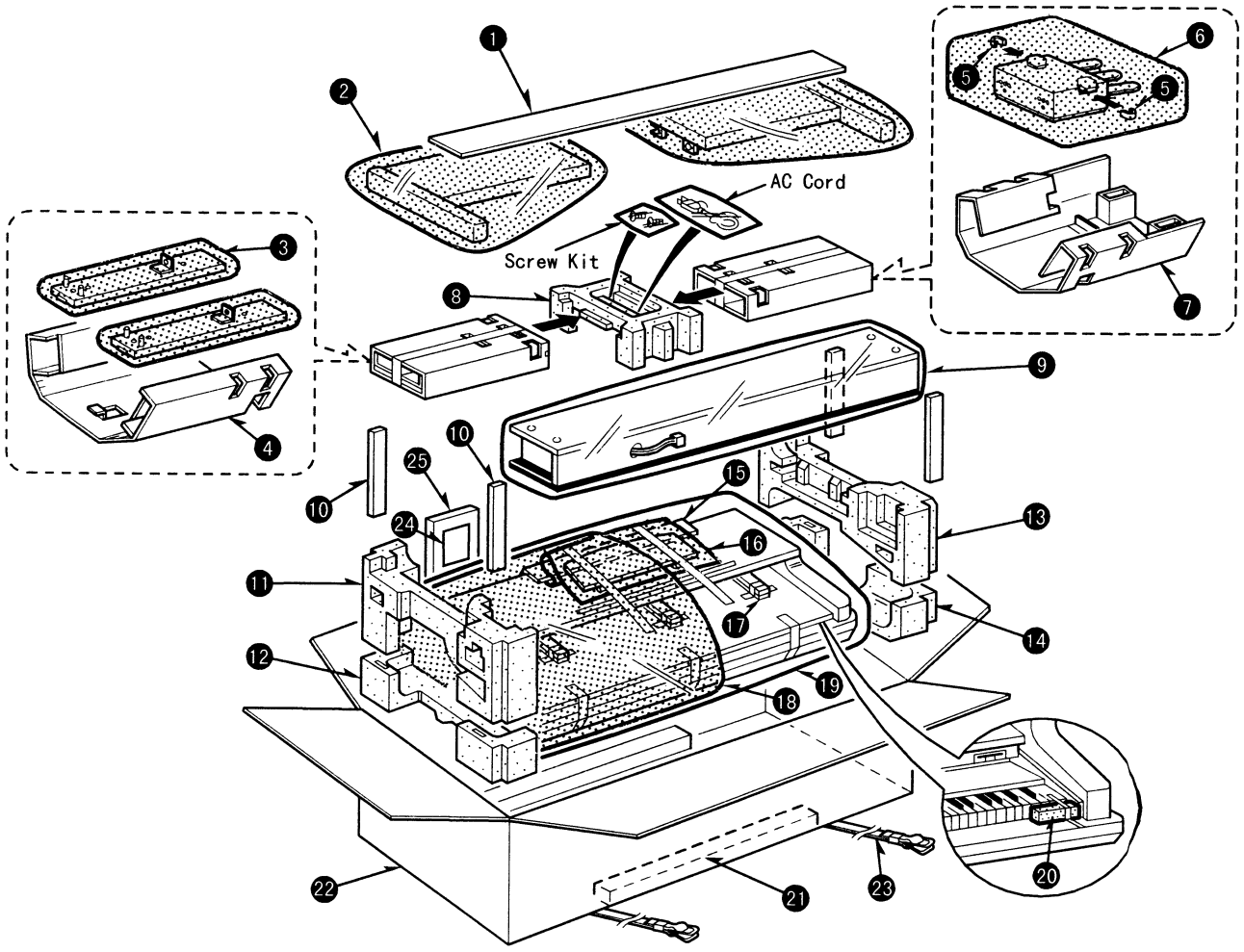


■MANUAL KEYBOARD PARTS

Ref. No.		Part No.	Description	P/S
SWITCH				
S1	⚠	ESB8273V	POWER SWITCH	1
MANUAL KEYBOARD PARTS				
100	⚠ PP	SHRG8390A	COVER,POWER SW	1
101	ABS	QGUG1040AA	BUTTON,POWER SWITCH	1
102	PS	QGPG0042AB	END COVER PANEL,RIGHT	1
103	PS	QGPG0041BB	END COVER PANEL,LEFT	1
104		QMFG1104AA	FELT	2
105	AS	QMWG1001AB	WHITE KEY (FIRST OCTAVE A KEY)	1
106	AS	QMWG1002AB	WHITE KEY (B KEY)	8
107	AS	QMWG1003AB	WHITE KEY (C KEY)	7
108	AS	QMWG1004AB	WHITE KEY (D KEY)	7
109	AS	QMWG1005AB	WHITE KEY (E KEY)	7
110	AS	QMWG1006AB	WHITE KEY (F KEY)	7
111	AS	QMWG1007AB	WHITE KEY (G KEY)	7
112	AS	QMWG1008AB	WHITE KEY (A KEY)	7
113	AS	QMWG1009AB	WHITE KEY (TOP OCTAVE C KEY)	1
114	AS	QMWG2001AC	BLACK KEY	36
115		SUSG534A	SPRING	88
116		QMWG8019CA	HAMMER (BLACK KEY)	36
117		QMWG8017DA	HAMMER (WHITE KEY)	52

Ref. No.		Part No.	Description	P/S
118		SHGG9121A	RUBBER CAP (HAMMER)	88
119	PA	QMWG8037AA	KEY GUIDE	88
120	ABS	QMWG8022AA	FULCURUM (4PCS.ON ONE)	1
121	ABS	QMWG8021AA	FULCURUM (12PCS.ON ONE)	7
122		SHRGA9080A	SPONGE	2
123		QMFG1073AA	FELT	2
124		QMFG1230AA	FELT	2
125		QMFG1101AA	FELT	2
126		QMFG1061AB	FELT	2
127		QMFG1231AC	FELT	2
128		QMFG1086AB	FELT	2
129		QMWG6006AA	RUBBER SWITCH (8PCS. ON ONE)	11
130		SHRG9751A	P.C.B.HOLDER	24
131		QMWG3003CA	CHASSIS	1
132		SUWG3154A	ANGLE	2
SCREWS				
N80		XTV3+10C	SCREW	2
N81		XTB4+12A	SCREW	4
N82		XTW3+10T	SCREW	14

■PACKING



■PACKING PARTS

	Ref. No.	Part No.	Description	P/S
		PACKING PARTS		
	1	QPNG0358AA	TOP CARDBOARD	1
	2	QPFG006AA	POLYETHYLENE BAG	2
	3	QPFG011AA	POLYETHYLENE BAG	2
○	4	QPGG0423AA	PAD	1
	5	SPNG5161A	SPACER	2
	6	SPHG1740A	PROTECTION SHEET	1
○	7	QPGG0422AA	PAD	1
○	8	QPNG0709AA	PAD	1
	9	QPFG012AA	POLYETHYLENE BAG	1
○	10	QPQG065AB	PROP	4
○	11	QPNG0705AA	PAD	1
○	12	QPNG0707AA	PAD	1
○	13	QPNG0706AA	PAD	1
○	14	QPNG0708AA	PAD	1
○	15	QPGG0421AA	PAD	1
	16	SPHG1490A	PROTECTION SHEET, SX-PR902C	1
	16	QPHG088AA	PROTECTION SHEET, SX-PR902R	1
	17	SPNG5161A	SPACER	3
	18	QPHG089AA	PROTECTION COVER, SX-PR902R	1
	19	QPFG013AA	POLYETHYLENE BAG	1
	20	QPNG0556AA	SPACER	2
	21	QPNG0632AA	PAD	2
○	22	QPGG0420AA	PACKING CASE, PAPER, SX-PR902R	1
○	22	QPGG0420AB	PACKING CASE, PAPER, SX-PR902C	1
	23	SPSG40A	BAND	2

	Ref. No.	Part No.	Description	P/S
	24	QFBG034AA	CLEANING CLOTH, SX-PR902R	1
		OPERATING INSTRUCTION MANUAL		
	25	QQFGPR702AA	OPERATING INSTRUCTION MANUAL, EN EK EP X XL XR XS XT XD XP XM XW	1
	25	QQFGPR702BA	OPERATING INSTRUCTION MANUAL, M	1
	25	QQFGPR702CA	OPERATING INSTRUCTION MANUAL, MC EF	1
	25-1	QQTG0497A	ENGLISH	1
	25-2	QQTG0499A	FRANCAIS	1
	25	QQFGPR702DA	OPERATING INSTRUCTION MANUAL, EZ	1
	25	QQFGPR702EA	OPERATING INSTRUCTION MANUAL, EW	1
	25-1	QQTG0499A	FRANCAIS	1
	25-2	QQTG0500A	DEUTSCH	1
	25	QQFGPR702FA	OPERATING INSTRUCTION MANUAL, EA	1
	25	QQFGPR702GA	OPERATING INSTRUCTION MANUAL, EH	1
	25-1	QQTG0501A	NERDERLANDS	1
	25-2	QQTG0499A	FRANCAIS	1
	25-3	QQTG0500A	DEUTSCH	1

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ORDER NO. EMID981703
A4

Service Manual

Supplement-1

PCM Digital Ensemble

SX-PR902R/PR902C

(M), (MC), (XM), (EN), (EH), (EF), (EZ), (EW), (EA), (EP), (EK), (XL), (XR), (XS), (XD), (XT), (X), (XP), (XW)

Please file and use this supplemental manual together with the service manual for Model No. SX-PR902R/PR902C Order No. EMID981697.

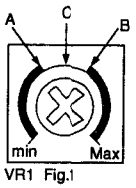
About the adjustment of switching amp

■ ADJUSTMENTS

Adjustment item	Necessary instrument	Adjustment condition	Adjustment point
Switching amp	Adjustment screwdriver not made from metal	Main volume is maximum	V.R. 1 on AS P.C.B.

Adjustments procedures

1. Turn VR1 until the end of the left. (Sounding the noise as a whistle.)
2. Turn VR1 to the right slowly with hearing as a whistle from monitor speaker, there is the point where the noise stops suddenly. (Point-A of Fig 1.)
3. Turn VR1 further to the right, sounding the whistle noise again. (Point-B of Fig 1.)
4. Set VR1 the center of between the point A and B. (Point-C of Fig 1.)



VR1 Fig.1

Change of Parts No.

AS AMP & POWER SUPPLY CIRCUIT (Refer to page Ⅲ-5)

REF. NO.	Parts No.		Description	P/S
	Original	**New**		
RESISTOR				
R62	ERDS2TJ222	**ERDS2TJ152**	1.5kΩ	1

⚠WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Technics

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